Licensing Information User Manual

MySQL AI, add-on to MySQL 26.10.0 Commercial

Table of Contents

Licensing Information 2
Licenses for Third-Party Components 3
- Apache Arrow 3
- Avro for cpp 32
- bzip2-libs 33
- compile time regular expressions 34
- cornac 34
- cryptography 35
- Cython 36
- dask 37
- distributed 41
- drain3 49
- eigen 50
- FastPFOR C++ Library 53
- grpc 53
- imbalanced-learn 56
- joblib 90
- LangChain 91
- LangChain-Community (Python) 111
- lightgbm 130
- Llama-3.2-3B-Instruct 162
- llama-cpp-python 166
- multilingual-e5-small 168
- Natural Language Toolkit (NLTK) 168
- Numpy 174
- onnxruntime python 182
- Oracle OCI Python SDK 193
- orbit-ml 200
- Pandas 206
- Paramiko 217
- pdf2image 219
- psutil 220
- pydantic 220
- pyod 222
- pytorch 251
- rapidhash 270
- requests 270
- scikit-learn 272
- scikit-surprise 294
- scipy 296
- sentence-transformers 329
- sentence-transformers/all-MiniLM-L12-v2 359
- shap 359
- sktime 381
- SQLAlchemy 396

SQLGlot 397
statsmodels 398
Tesseract 419
TinyXML2 423
tornado 423
transformers 423
xgboost 473
|| Additional third-party components 490
Standard Licenses 566
Apache License v2.0, January 2004 566
Mozilla Public License 2.0 570
Python Software Foundation license, version 2 575
GNU Lesser General Public License v2.1, February 1999 579
GNU General Public License, v3.0 with GCC Runtime library exception 586
GNU Lesser General Public License v3, June 2007 598
Written Offer for Source Code 610

This License Information User Manual contains Oracle's product license and other licensing information, including licensing information for third-party software which may be included in this distribution of MySQL AI, add-on to MySQL 26.10.0 Commercial.

Last updated: October 2026

Introduction

This document is a part of the product or program documentation under the terms of your Oracle license agreement and is intended to help you understand the program editions, entitlements, restrictions, prerequisites, special license rights, and/or separately licensed third party technology terms associated with the Oracle software program(s) covered by this document (the “Program(s)”). If you have a question about your license rights and obligations, please contact your Oracle sales representative, review the information provided in Oracle's Software Investment Guide (https://www.oracle.com/corporate/pricing/), and/or contact the applicable Oracle License Management Services representative listed on https://www.oracle.com/corporate/license-management-services/.

Licensing Information

Product License - MySQL AI, add-on to MySQL 26.10.0 Commercial

Last updated: October 2026

Copyright (c) 2025, 2026, Oracle and/or its affiliates.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS. Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be

subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure the safe use of this software. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software in dangerous applications.

`Oracle` is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

This software and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

Licenses for Third-Party Components

The following sections contain licensing information for libraries that may be included with this product. We are thankful to all individuals that have created these. Standard licenses referenced herein are detailed in the Standard Licenses section.

Apache Arrow

```
Copyright 2016-2019 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (http://www.apache.org/).

This product includes software from the SFrame project (BSD, 3-clause).
* Copyright (C) 2015 Dato, Inc.
* Copyright (c) 2009 Carnegie Mellon University.

This product includes software from the Feather project (Apache 2.0)
https://github.com/wesm/feather

This product includes software from the DyND project (BSD 2-clause)
https://github.com/libdynd

This product includes software from the LLVM project
 * distributed under the University of Illinois Open Source

This product includes software from the google-lint project
 * Copyright (c) 2009 Google Inc. All rights reserved.

This product includes software from the mman-win32 project
 * Copyright https://code.google.com/p/mman-win32/
 * Licensed under the MIT License;

This product includes software from the LevelDB project
 * Copyright (c) 2011 The LevelDB Authors. All rights reserved.
 * Use of this source code is governed by a BSD-style license that can be
 * Moved from Kudu http://github.com/cloudera/kudu

This product includes software from the CMake project
 * Copyright 2001-2009 Kitware, Inc.
```

```
 * Copyright 2012-2014 Continuum Analytics, Inc.
 * All rights reserved.

This product includes software from https://github.com/matthew-brett/multibuild (BSD 2-clause)
 * Copyright (c) 2013-2016, Matt Terry and Matthew Brett; all rights reserved.

This product includes software from the Ibis project (Apache 2.0)
 * Copyright (c) 2015 Cloudera, Inc.
 * https://github.com/cloudera/ibis

This product includes software from Dremio (Apache 2.0)
  * Copyright (C) 2017-2018 Dremio Corporation
  * https://github.com/dremio/dremio-oss

This product includes software from Google Guava (Apache 2.0)
  * Copyright (C) 2007 The Guava Authors
  * https://github.com/google/guava

This product include software from CMake (BSD 3-Clause)
  * CMake - Cross Platform Makefile Generator
  * Copyright 2000-2019 Kitware, Inc. and Contributors

The web site includes files generated by Jekyll.

--------------------------------------------------------------------------------

This product includes code from Apache Kudu, which includes the following in
its NOTICE file:

  Apache Kudu
  Copyright 2016 The Apache Software Foundation

  This product includes software developed at
  The Apache Software Foundation (http://www.apache.org/).

  Portions of this software were developed at
  Cloudera, Inc (http://www.cloudera.com/).

--------------------------------------------------------------------------------

This product includes code from Apache ORC, which includes the following in
its NOTICE file:

  Apache ORC
  Copyright 2013-2019 The Apache Software Foundation

  This product includes software developed by The Apache Software
  Foundation (http://www.apache.org/).

  This product includes software developed by Hewlett-Packard:
  (c) Copyright [2014-2015] Hewlett-Packard Development Company, L.P

----------------------

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

--------------------------------------------------------------------------------

src/arrow/util (some portions): Apache 2.0, and 3-clause BSD

Some portions of this module are derived from code in the Chromium project,
copyright (c) Google inc and (c) The Chromium Authors and licensed under the
```

```
Apache 2.0 License or the under the 3-clause BSD license:

  Copyright (c) 2013 The Chromium Authors. All rights reserved.

  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:

     * Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above
  copyright notice, this list of conditions and the following disclaimer
  in the documentation and/or other materials provided with the
  distribution.
     * Neither the name of Google Inc. nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

This project includes code from Daniel Lemire's FrameOfReference project.

https://github.com/lemire/FrameOfReference/blob/6ccaf9e97160f9a3b299e23a8ef739e711ef0c71/src/bpacking.cpp
https://github.com/lemire/FrameOfReference/blob/146948b6058a976bc7767262ad3a2ce201486b93/scripts/turbopack

Copyright: 2013 Daniel Lemire
Home page: http://lemire.me/en/
Project page: https://github.com/lemire/FrameOfReference
License: Apache License Version 2.0 http://www.apache.org/licenses/LICENSE-2.0

--------------------------------------------------------------------------------

This project includes code from the TensorFlow project

Copyright 2015 The TensorFlow Authors. All Rights Reserved.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

--------------------------------------------------------------------------------

This project includes code from the NumPy project.

https://github.com/numpy/numpy/blob/e1f191c46f2eebd6cb892a4bfe14d9dd43a06c4e/numpy/core/src/multiarray/mul

https://github.com/numpy/numpy/blob/68fd82271b9ea5a9e50d4e761061dfcca851382a/numpy/core/src/multiarray/dat
```

```
Copyright (c) 2005-2017, NumPy Developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.

    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.

    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

This project includes code from the Boost project

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:

The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

--------------------------------------------------------------------------------

This project includes code from the FlatBuffers project

Copyright 2014 Google Inc.

Licensed under the Apache License, Version 2.0 (the "License");
```

```
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

--------------------------------------------------------------------------------

This project includes code from the tslib project

Copyright 2015 Microsoft Corporation. All rights reserved.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

--------------------------------------------------------------------------------

This project includes code from the jemalloc project

https://github.com/jemalloc/jemalloc

Copyright (C) 2002-2017 Jason Evans <jasone@canonware.com>.
All rights reserved.
Copyright (C) 2007-2012 Mozilla Foundation.  All rights reserved.
Copyright (C) 2009-2017 Facebook, Inc.  All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice(s),
   this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice(s),
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER(S) ``AS IS'' AND ANY EXPRESS
OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.  IN NO
EVENT SHALL THE COPYRIGHT HOLDER(S) BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
--------------------------------------------------------------------------------

This project includes code from the Go project, BSD 3-clause license + PATENTS
weak patent termination clause
(https://github.com/golang/go/blob/master/PATENTS).

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without
```

```
modification, are permitted provided that the following conditions are
met:

   * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
   * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
   * Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-------------------------------------------------------------------------------

This project includes code from the hs2client

https://github.com/cloudera/hs2client

Copyright 2016 Cloudera Inc.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

-------------------------------------------------------------------------------

The script ci/scripts/util_wait_for_it.sh has the following license

Copyright (c) 2016 Giles Hall

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
```

```
SOFTWARE.

--------------------------------------------------------------------------------

The script r/configure has the following license (MIT)

Copyright (c) 2017, Jeroen Ooms and Jim Hester

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

--------------------------------------------------------------------------------

cpp/src/arrow/util/logging.cc, cpp/src/arrow/util/logging.h and
cpp/src/arrow/util/logging-test.cc are adapted from
Ray Project (https://github.com/ray-project/ray) (Apache 2.0).

Copyright (c) 2016 Ray Project (https://github.com/ray-project/ray)

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

--------------------------------------------------------------------------------
The files cpp/src/arrow/vendored/datetime/date.h, cpp/src/arrow/vendored/datetime/tz.h,
cpp/src/arrow/vendored/datetime/tz_private.h, cpp/src/arrow/vendored/datetime/ios.h,
cpp/src/arrow/vendored/datetime/ios.mm,
cpp/src/arrow/vendored/datetime/tz.cpp are adapted from
Howard Hinnant's date library (https://github.com/HowardHinnant/date)
It is licensed under MIT license.

The MIT License (MIT)
Copyright (c) 2015, 2016, 2017 Howard Hinnant
Copyright (c) 2016 Adrian Colomitchi
Copyright (c) 2017 Florian Dang
Copyright (c) 2017 Paul Thompson
Copyright (c) 2018 Tomasz Kamiński

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
```

```
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

--------------------------------------------------------------------------------

The file cpp/src/arrow/util/utf8.h includes code adapted from the page
  https://bjoern.hoehrmann.de/utf-8/decoder/dfa/
with the following license (MIT)

Copyright (c) 2008-2009 Bjoern Hoehrmann <bjoern@hoehrmann.de>

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

--------------------------------------------------------------------------------

The files in cpp/src/arrow/vendored/xxhash/ have the following license
(BSD 2-Clause License)

xxHash Library
Copyright (c) 2012-2014, Yann Collet
All rights reserved.

Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this
  list of conditions and the following disclaimer in the documentation and/or
  other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
You can contact the author at :
- xxHash homepage: http://www.xxhash.com
- xxHash source repository : https://github.com/Cyan4973/xxHash

--------------------------------------------------------------------------------

The files in cpp/src/arrow/vendored/double-conversion/ have the following license
(BSD 3-Clause License)

Copyright 2006-2011, the V8 project authors. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
      copyright notice, this list of conditions and the following
      disclaimer in the documentation and/or other materials provided
      with the distribution.
    * Neither the name of Google Inc. nor the names of its
      contributors may be used to endorse or promote products derived
      from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

The files in cpp/src/arrow/vendored/uriparser/ have the following license
(BSD 3-Clause License)

uriparser - RFC 3986 URI parsing library

Copyright (C) 2007, Weijia Song <songweijia@gmail.com>
Copyright (C) 2007, Sebastian Pipping <sebastian@pipping.org>
All rights reserved.

Redistribution  and use in source and binary forms, with or without
modification,  are permitted provided that the following conditions
are met:

    * Redistributions   of  source  code  must  retain  the   above
      copyright  notice, this list of conditions and the  following
      disclaimer.

    * Redistributions  in  binary  form must  reproduce  the  above
      copyright  notice, this list of conditions and the  following
      disclaimer   in  the  documentation  and/or  other  materials
      provided with the distribution.

    * Neither  the name of the <ORGANIZATION> nor the names of  its
      contributors  may  be  used to endorse  or  promote  products
      derived  from  this software without specific  prior  written
      permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
```

```
"AS  IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT  NOT
LIMITED  TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND  FITNESS
FOR  A  PARTICULAR  PURPOSE ARE DISCLAIMED. IN NO EVENT  SHALL  THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL,    SPECIAL,   EXEMPLARY,   OR   CONSEQUENTIAL   DAMAGES
(INCLUDING,  BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES;  LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT  LIABILITY,  OR  TORT (INCLUDING  NEGLIGENCE  OR  OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

The files under dev/tasks/conda-recipes have the following license

BSD 3-clause license
Copyright (c) 2015-2018, conda-forge
All rights reserved.

Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.

3. Neither the name of the copyright holder nor the names of its contributors
   may be used to endorse or promote products derived from this software without
   specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

The files in cpp/src/arrow/vendored/utfcpp/ have the following license

Copyright 2006-2018 Nemanja Trifunovic

Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:

The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
```

```
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

--------------------------------------------------------------------------------

This project includes code from Apache Kudu.

 * cpp/cmake_modules/CompilerInfo.cmake is based on Kudu's cmake_modules/CompilerInfo.cmake

Copyright: 2016 The Apache Software Foundation.
Home page: https://kudu.apache.org/
License: http://www.apache.org/licenses/LICENSE-2.0

--------------------------------------------------------------------------------

This project includes code from Apache Impala (incubating), formerly
Impala. The Impala code and rights were donated to the ASF as part of the
Incubator process after the initial code imports into Apache Parquet.

Copyright: 2012 Cloudera, Inc.
Copyright: 2016 The Apache Software Foundation.
Home page: http://impala.apache.org/
License: http://www.apache.org/licenses/LICENSE-2.0

--------------------------------------------------------------------------------

This project includes code from Apache Aurora.

* dev/release/{release,changelog,release-candidate} are based on the scripts from
  Apache Aurora

Copyright: 2016 The Apache Software Foundation.
Home page: https://aurora.apache.org/
License: http://www.apache.org/licenses/LICENSE-2.0

--------------------------------------------------------------------------------

This project includes code from the Google styleguide.

* cpp/build-support/cpplint.py is based on the scripts from the Google styleguide.

Copyright: 2009 Google Inc. All rights reserved.
Homepage: https://github.com/google/styleguide
License: 3-clause BSD

--------------------------------------------------------------------------------

This project includes code from Snappy.

* cpp/cmake_modules/{SnappyCMakeLists.txt,SnappyConfig.h} are based on code
  from Google's Snappy project.

Copyright: 2009 Google Inc. All rights reserved.
Homepage: https://github.com/google/snappy
License: 3-clause BSD

--------------------------------------------------------------------------------

This project includes code from the manylinux project.

* python/manylinux1/scripts/{build_python.sh,python-tag-abi-tag.py,
  requirements.txt} are based on code from the manylinux project.

Copyright: 2016 manylinux
```

```
Homepage: https://github.com/pypa/manylinux
License: The MIT License (MIT)

--------------------------------------------------------------------------------

This project includes code from the cymove project:

* python/pyarrow/includes/common.pxd includes code from the cymove project

The MIT License (MIT)
Copyright (c) 2019 Omer Ozarslan

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE
OR OTHER DEALINGS IN THE SOFTWARE.

--------------------------------------------------------------------------------

The projects includes code from the Ursabot project under the dev/archery
directory.

License: BSD 2-Clause

Copyright 2019 RStudio, Inc.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

This project include code from mingw-w64.

* cpp/src/arrow/util/cpu-info.cc has a polyfill for mingw-w64 < 5

Copyright (c) 2009 - 2013 by the mingw-w64 project
```

```
Homepage: https://mingw-w64.org
License: Zope Public License (ZPL) Version 2.1.

--------------------------------------------------------------------------------

This project include code from Google's Asylo project.

* cpp/src/arrow/result.h is based on status_or.h

Copyright (c)  Copyright 2017 Asylo authors
Homepage: https://asylo.dev/
License: Apache 2.0

--------------------------------------------------------------------------------

This project includes code from Google's protobuf project

* cpp/src/arrow/result.h ARROW_ASSIGN_OR_RAISE is based off ASSIGN_OR_RETURN
* cpp/src/arrow/util/bit_stream_utils.h contains code from wire_format_lite.h

Copyright 2008 Google Inc.  All rights reserved.
Homepage: https://developers.google.com/protocol-buffers/
License:

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
    * Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code generated by the Protocol Buffer compiler is owned by the owner
of the input file used when generating it.  This code is not
standalone and requires a support library to be linked with it.  This
support library is itself covered by the above license.

--------------------------------------------------------------------------------

3rdparty dependency LLVM is statically linked in certain binary distributions.
Additionally some sections of source code have been derived from sources in LLVM
and have been clearly labeled as such. LLVM has the following license:

==============================================================================
The LLVM Project is under the Apache License v2.0 with LLVM Exceptions:
==============================================================================

                                 Apache License
                           Version 2.0, January 2004
```

```
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

---- LLVM Exceptions to the Apache 2.0 License ----
As an exception, if, as a result of your compiling your source code, portions
of this Software are embedded into an Object form of such source code, you
may redistribute such embedded portions in such Object form without complying
with the conditions of Sections 4(a), 4(b) and 4(d) of the License.

In addition, if you combine or link compiled forms of this Software with
software that is licensed under the GPLv2 ("Combined Software") and if a
court of competent jurisdiction determines that the patent provision (Section
3), the indemnity provision (Section 9) or other Section of the License
conflicts with the conditions of the GPLv2, you may retroactively and
prospectively choose to deem waived or otherwise exclude such Section(s) of
the License, but only in their entirety and only with respect to the Combined
Software.

==============================================================================
Software from third parties included in the LLVM Project:
==============================================================================
The LLVM Project contains third party software which is under different license
terms. All such code will be identified clearly using at least one of two
mechanisms:
1) It will be in a separate directory tree with its own `LICENSE.txt` or
   `LICENSE` file at the top containing the specific license and restrictions
   which apply to that software, or
2) It will contain specific license and restriction terms at the top of every
   file.

------------------------------------------------------------------------------

3rdparty dependency gRPC is statically linked in certain binary
distributions, like the python wheels. gRPC has the following license:

Copyright 2014 gRPC authors.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

------------------------------------------------------------------------------

3rdparty dependency Apache Thrift is statically linked in certain binary
distributions, like the python wheels. Apache Thrift has the following license:

Apache Thrift
Copyright (C) 2006 - 2019, The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (http://www.apache.org/).

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

     http://www.apache.org/licenses/LICENSE-2.0
```

```
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

--------------------------------------------------------------------------------

3rdparty dependency Apache ORC is statically linked in certain binary
distributions, like the python wheels. Apache ORC has the following license:

Apache ORC
Copyright 2013-2019 The Apache Software Foundation

This product includes software developed by The Apache Software
Foundation (http://www.apache.org/).

This product includes software developed by Hewlett-Packard:
(c) Copyright [2014-2015] Hewlett-Packard Development Company, L.P

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

     http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

--------------------------------------------------------------------------------

3rdparty dependency zstd is statically linked in certain binary
distributions, like the python wheels. ZSTD has the following license:

BSD License

For Zstandard software

Copyright (c) 2016-present, Facebook, Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.

 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.

 * Neither the name Facebook nor the names of its contributors may be used to
   endorse or promote products derived from this software without specific
   prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
```

```
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

3rdparty dependency lz4 is statically linked in certain binary
distributions, like the python wheels. lz4 has the following license:

LZ4 Library
Copyright (c) 2011-2016, Yann Collet
All rights reserved.

Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this
  list of conditions and the following disclaimer in the documentation and/or
  other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

3rdparty dependency Brotli is statically linked in certain binary
distributions, like the python wheels. Brotli has the following license:

Copyright (c) 2009, 2010, 2013-2016 by the Brotli Authors.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.

--------------------------------------------------------------------------------

3rdparty dependency rapidjson is statically linked in certain binary
distributions, like the python wheels. rapidjson and its dependencies have the
following licenses:

Tencent is pleased to support the open source community by making RapidJSON
available.

Copyright (C) 2015 THL A29 Limited, a Tencent company, and Milo Yip.
```

```
All rights reserved.

If you have downloaded a copy of the RapidJSON binary from Tencent, please note
that the RapidJSON binary is licensed under the MIT License.
If you have downloaded a copy of the RapidJSON source code from Tencent, please
note that RapidJSON source code is licensed under the MIT License, except for
the third-party components listed below which are subject to different license
terms.  Your integration of RapidJSON into your own projects may require
compliance with the MIT License, as well as the other licenses applicable to
the third-party components included within RapidJSON. To avoid the problematic
JSON license in your own projects, it's sufficient to exclude the
bin/jsonchecker/ directory, as it's the only code under the JSON license.
A copy of the MIT License is included in this file.

Other dependencies and licenses:

    Open Source Software Licensed Under the BSD License:
    --------------------------------------------------------------------

    The msinttypes r29
    Copyright (c) 2006-2013 Alexander Chemeris
    All rights reserved.

    Redistribution and use in source and binary forms, with or without
    modification, are permitted provided that the following conditions are met:

    * Redistributions of source code must retain the above copyright notice,
    this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright notice,
    this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
    * Neither the name of  copyright holder nor the names of its contributors
    may be used to endorse or promote products derived from this software
    without specific prior written permission.

    THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
    EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
    WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
    DISCLAIMED. IN NO EVENT SHALL THE REGENTS AND CONTRIBUTORS BE LIABLE FOR
    ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
    DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
    SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
    CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
    LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
    OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
    DAMAGE.

    Terms of the MIT License:
    --------------------------------------------------------------------

    Permission is hereby granted, free of charge, to any person obtaining a
    copy of this software and associated documentation files (the "Software"),
    to deal in the Software without restriction, including without limitation
    the rights to use, copy, modify, merge, publish, distribute, sublicense,
    and/or sell copies of the Software, and to permit persons to whom the
    Software is furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included
    in all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
    IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
    FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
    AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
    LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
    FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
    DEALINGS IN THE SOFTWARE.
```

```
--------------------------------------------------------------------------------

3rdparty dependency snappy is statically linked in certain binary
distributions, like the python wheels. snappy has the following license:

Copyright 2011, Google Inc.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright notice,
      this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright notice,
      this list of conditions and the following disclaimer in the documentation
      and/or other materials provided with the distribution.
    * Neither the name of Google Inc. nor the names of its contributors may be
      used to endorse or promote products derived from this software without
      specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

===

Some of the benchmark data in testdata/ is licensed differently:

 - fireworks.jpeg is Copyright 2013 Steinar H. Gunderson, and
   is licensed under the Creative Commons Attribution 3.0 license
   (CC-BY-3.0). See https://creativecommons.org/licenses/by/3.0/
   for more information.

 - kppkn.gtb is taken from the Gaviota chess tablebase set, and
   is licensed under the MIT License. See
   https://sites.google.com/site/gaviotachessengine/Home/endgame-tablebases-1
   for more information.

 - paper-100k.pdf is an excerpt (bytes 92160 to 194560) from the paper
   “Combinatorial Modeling of Chromatin Features Quantitatively Predicts DNA
   Replication Timing in _Drosophila_” by Federico Comoglio and Renato Paro,
   which is licensed under the CC-BY license. See
   http://www.ploscompbiol.org/static/license for more ifnormation.

 - alice29.txt, asyoulik.txt, plrabn12.txt and lcet10.txt are from Project
   Gutenberg. The first three have expired copyrights and are in the public
   domain; the latter does not have expired copyright, but is still in the
   public domain according to the license information
   (http://www.gutenberg.org/ebooks/53).

--------------------------------------------------------------------------------

3rdparty dependency gflags is statically linked in certain binary
distributions, like the python wheels. gflags has the following license:

Copyright (c) 2006, Google Inc.
All rights reserved.
```

```
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
    * Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

3rdparty dependency glog is statically linked in certain binary
distributions, like the python wheels. glog has the following license:

Copyright (c) 2008, Google Inc.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
    * Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


A function gettimeofday in utilities.cc is based on

http://www.google.com/codesearch/p?hl=en#dR3YEbitojA/COPYING&q=GetSystemTimeAsFileTime%20license:bsd

The license of this code is:
```

```
Copyright (c) 2003-2008, Jouni Malinen <j@w1.fi> and contributors
All Rights Reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

3. Neither the name(s) of the above-listed copyright holder(s) nor the
   names of its contributors may be used to endorse or promote products
   derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

3rdparty dependency re2 is statically linked in certain binary
distributions, like the python wheels. re2 has the following license:

Copyright (c) 2009 The RE2 Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
      copyright notice, this list of conditions and the following
      disclaimer in the documentation and/or other materials provided
      with the distribution.
    * Neither the name of Google Inc. nor the names of its contributors
      may be used to endorse or promote products derived from this
      software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

3rdparty dependency c-ares is statically linked in certain binary
```

```
distributions, like the python wheels. c-ares has the following license:

# c-ares license

Copyright (c) 2007 - 2018, Daniel Stenberg with many contributors, see AUTHORS
file.

Copyright 1998 by the Massachusetts Institute of Technology.

Permission to use, copy, modify, and distribute this software and its
documentation for any purpose and without fee is hereby granted, provided that
the above copyright notice appear in all copies and that both that copyright
notice and this permission notice appear in supporting documentation, and that
the name of M.I.T. not be used in advertising or publicity pertaining to
distribution of the software without specific, written prior permission.
M.I.T. makes no representations about the suitability of this software for any
purpose.  It is provided "as is" without express or implied warranty.

--------------------------------------------------------------------------------

3rdparty dependency zlib is redistributed as a dynamically linked shared
library in certain binary distributions, like the python wheels. In the future
this will likely change to static linkage. zlib has the following license:

zlib.h -- interface of the 'zlib' general purpose compression library
  version 1.2.11, January 15th, 2017

  Copyright (C) 1995-2017 Jean-loup Gailly and Mark Adler

  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.

  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:

  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.

  Jean-loup Gailly        Mark Adler
  jloup@gzip.org          madler@alumni.caltech.edu

--------------------------------------------------------------------------------

3rdparty dependency openssl is redistributed as a dynamically linked shared
library in certain binary distributions, like the python wheels. openssl
preceding version 3 has the following license:

  LICENSE ISSUES
  ==============

  The OpenSSL toolkit stays under a double license, i.e. both the conditions of
  the OpenSSL License and the original SSLeay license apply to the toolkit.
  See below for the actual license texts.

  OpenSSL License
  ---------------

/* ====================================================================
 * Copyright (c) 1998-2019 The OpenSSL Project.  All rights reserved.
 *
```

```
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 *
 * 1. Redistributions of source code must retain the above copyright
 *    notice, this list of conditions and the following disclaimer.
 *
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in
 *    the documentation and/or other materials provided with the
 *    distribution.
 *
 * 3. All advertising materials mentioning features or use of this
 *    software must display the following acknowledgment:
 *    "This product includes software developed by the OpenSSL Project
 *    for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
 *
 * 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
 *    endorse or promote products derived from this software without
 *    prior written permission. For written permission, please contact
 *    openssl-core@openssl.org.
 *
 * 5. Products derived from this software may not be called "OpenSSL"
 *    nor may "OpenSSL" appear in their names without prior written
 *    permission of the OpenSSL Project.
 *
 * 6. Redistributions of any form whatsoever must retain the following
 *    acknowledgment:
 *    "This product includes software developed by the OpenSSL Project
 *    for use in the OpenSSL Toolkit (http://www.openssl.org/)"
 *
 * THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY
 * EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
 * PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE OpenSSL PROJECT OR
 * ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
 * SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
 * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 * LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
 * STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
 * ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
 * OF THE POSSIBILITY OF SUCH DAMAGE.
 * ====================================================================
 *
 * This product includes cryptographic software written by Eric Young
 * (eay@cryptsoft.com).  This product includes software written by Tim
 * Hudson (tjh@cryptsoft.com).
 *
 */

 Original SSLeay License
 -----------------------

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
 * All rights reserved.
 *
 * This package is an SSL implementation written
 * by Eric Young (eay@cryptsoft.com).
 * The implementation was written so as to conform with Netscapes SSL.
 *
 * This library is free for commercial and non-commercial use as long as
 * the following conditions are aheared to.  The following conditions
 * apply to all code found in this distribution, be it the RC4, RSA,
 * lhash, DES, etc., code; not just the SSL code.  The SSL documentation
 * included with this distribution is covered by the same copyright terms
 * except that the holder is Tim Hudson (tjh@cryptsoft.com).
```

```
 *
 * Copyright remains Eric Young's, and as such any Copyright notices in
 * the code are not to be removed.
 * If this package is used in a product, Eric Young should be given attribution
 * as the author of the parts of the library used.
 * This can be in the form of a textual message at program startup or
 * in documentation (online or textual) provided with the package.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the copyright
 *    notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in the
 *    documentation and/or other materials provided with the distribution.
 * 3. All advertising materials mentioning features or use of this software
 *    must display the following acknowledgement:
 *    "This product includes cryptographic software written by
 *     Eric Young (eay@cryptsoft.com)"
 *    The word 'cryptographic' can be left out if the rouines from the library
 *    being used are not cryptographic related :-).
 * 4. If you include any Windows specific code (or a derivative thereof) from
 *    the apps directory (application code) you must include an acknowledgement:
 *    "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
 *
 * THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
 * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
 * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
 * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
 * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
 * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
 * SUCH DAMAGE.
 *
 * The licence and distribution terms for any publically available version or
 * derivative of this code cannot be changed.  i.e. this code cannot simply be
 * copied and put under another distribution licence
 * [including the GNU Public Licence.]
 */

--------------------------------------------------------------------------------

This project includes code from the rtools-backports project.

* ci/scripts/PKGBUILD and ci/scripts/r_windows_build.sh are based on code
  from the rtools-backports project.

Copyright: Copyright (c) 2013 - 2019, Алексей and Jeroen Ooms.
All rights reserved.
Homepage: https://github.com/r-windows/rtools-backports
License: 3-clause BSD

--------------------------------------------------------------------------------

Some code from pandas has been adapted for the pyarrow codebase. pandas is
available under the 3-clause BSD license, which follows:

pandas license
==============

Copyright (c) 2011-2012, Lambda Foundry, Inc. and PyData Development Team
All rights reserved.
```

```
Copyright (c) 2008-2011 AQR Capital Management, LLC
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.

    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.

    * Neither the name of the copyright holder nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

Some bits from DyND, in particular aspects of the build system, have been
adapted from libdynd and dynd-python under the terms of the BSD 2-clause
license

The BSD 2-Clause License

    Copyright (C) 2011-12, Dynamic NDArray Developers
    All rights reserved.

    Redistribution and use in source and binary forms, with or without
    modification, are permitted provided that the following conditions are
    met:

        * Redistributions of source code must retain the above copyright
           notice, this list of conditions and the following disclaimer.

        * Redistributions in binary form must reproduce the above
           copyright notice, this list of conditions and the following
           disclaimer in the documentation and/or other materials provided
           with the distribution.

    THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
    "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
    LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
    A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
    OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
    SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
    LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
    DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
    THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
    (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
    OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Dynamic NDArray Developers list:
```

```
 * Mark Wiebe
 * Continuum Analytics

--------------------------------------------------------------------------------

Some source code from Ibis (https://github.com/cloudera/ibis) has been adapted
for PyArrow. Ibis is released under the Apache License, Version 2.0.

--------------------------------------------------------------------------------

dev/tasks/homebrew-formulae/apache-arrow.rb has the following license:

BSD 2-Clause License

Copyright (c) 2009-present, Homebrew contributors
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------

cpp/src/arrow/vendored/base64.cpp has the following license

ZLIB License

Copyright (C) 2004-2017 René Nyffenegger

This source code is provided 'as-is', without any express or implied
warranty. In no event will the author be held liable for any damages arising
from the use of this software.

Permission is granted to anyone to use this software for any purpose, including
commercial applications, and to alter it and redistribute it freely, subject to
the following restrictions:

1. The origin of this source code must not be misrepresented; you must not
   claim that you wrote the original source code. If you use this source code
   in a product, an acknowledgment in the product documentation would be
   appreciated but is not required.

2. Altered source versions must be plainly marked as such, and must not be
   misrepresented as being the original source code.

3. This notice may not be removed or altered from any source distribution.

René Nyffenegger rene.nyffenegger@adp-gmbh.ch
```

```
--------------------------------------------------------------------------------

This project includes code from Folly.

 * cpp/src/arrow/vendored/ProducerConsumerQueue.h

is based on Folly's

 * folly/Portability.h
 * folly/lang/Align.h
 * folly/ProducerConsumerQueue.h

Copyright: Copyright (c) Facebook, Inc. and its affiliates.
Home page: https://github.com/facebook/folly
License: http://www.apache.org/licenses/LICENSE-2.0

--------------------------------------------------------------------------------

The file cpp/src/arrow/vendored/musl/strptime.c has the following license

Copyright © 2005-2020 Rich Felker, et al.

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

--------------------------------------------------------------------------------

The file cpp/cmake_modules/BuildUtils.cmake contains code from

https://gist.github.com/cristianadam/ef920342939a89fae3e8a85ca9459b49

which is made available under the MIT license

Copyright (c) 2019 Cristian Adam

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
```

```
SOFTWARE.

--------------------------------------------------------------------------------

The files in cpp/src/arrow/vendored/portable-snippets/ contain code from

https://github.com/nemequ/portable-snippets

and have the following copyright notice:

Each source file contains a preamble explaining the license situation
for that file, which takes priority over this file.  With the
exception of some code pulled in from other repositories (such as
µnit, an MIT-licensed project which is used for testing), the code is
public domain, released using the CC0 1.0 Universal dedication (*).

(*) https://creativecommons.org/publicdomain/zero/1.0/legalcode

--------------------------------------------------------------------------------

The files in cpp/src/arrow/vendored/fast_float/ contain code from

https://github.com/lemire/fast_float

which is made available under the Apache License 2.0.

--------------------------------------------------------------------------------

The file python/pyarrow/vendored/docscrape.py contains code from

https://github.com/numpy/numpydoc/

which is made available under the BSD 2-clause license.

--------------------------------------------------------------------------------

The file python/pyarrow/vendored/version.py contains code from

https://github.com/pypa/packaging/

which is made available under both the Apache license v2.0 and the
BSD 2-clause license.

--------------------------------------------------------------------------------

The files in cpp/src/arrow/vendored/pcg contain code from

https://github.com/imneme/pcg-cpp

and have the following copyright notice:

Copyright 2014-2019 Melissa O'Neill <oneill@pcg-random.org>,
                    and the PCG Project contributors.

SPDX-License-Identifier: (Apache-2.0 OR MIT)

Licensed under the Apache License, Version 2.0 (provided in
LICENSE-APACHE.txt and at http://www.apache.org/licenses/LICENSE-2.0)
or under the MIT license (provided in LICENSE-MIT.txt and at
http://opensource.org/licenses/MIT), at your option. This file may not
be copied, modified, or distributed except according to those terms.

Distributed on an "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, either
express or implied.  See your chosen license for details.

--------------------------------------------------------------------------------
r/R/dplyr-count-tally.R (some portions)
```

```
Some portions of this file are derived from code from

https://github.com/tidyverse/dplyr/

which is made available under the MIT license

Copyright (c) 2013-2019 RStudio and others.

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the “Software”), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED “AS IS”, WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

--------------------------------------------------------------------------------

The file src/arrow/util/io_util.cc contains code from the CPython project
which is made available under the Python Software Foundation License Version 2.

--------------------------------------------------------------------------------

3rdparty dependency opentelemetry-cpp is statically linked in certain binary
distributions. opentelemetry-cpp is made available under the Apache License 2.0.

Copyright The OpenTelemetry Authors
SPDX-License-Identifier: Apache-2.0

--------------------------------------------------------------------------------

ci/conan/ is based on code from Conan Package and Dependency Manager.

Copyright (c) 2019 Conan.io

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

--------------------------------------------------------------------------------

3rdparty dependency UCX is redistributed as a dynamically linked shared
```

```
library in certain binary distributions. UCX has the following license:

Copyright (c) 2014-2015      UT-Battelle, LLC. All rights reserved.
Copyright (C) 2014-2020      Mellanox Technologies Ltd. All rights reserved.
Copyright (C) 2014-2015      The University of Houston System. All rights reserved.
Copyright (C) 2015           The University of Tennessee and The University
                             of Tennessee Research Foundation. All rights reserved.
Copyright (C) 2016-2020      ARM Ltd. All rights reserved.
Copyright (c) 2016           Los Alamos National Security, LLC. All rights reserved.
Copyright (C) 2016-2020      Advanced Micro Devices, Inc.  All rights reserved.
Copyright (C) 2019           UChicago Argonne, LLC.  All rights reserved.
Copyright (c) 2018-2020      NVIDIA CORPORATION. All rights reserved.
Copyright (C) 2020           Huawei Technologies Co., Ltd. All rights reserved.
Copyright (C) 2016-2020      Stony Brook University. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------------------------------------------------------

The file dev/tasks/r/github.packages.yml contains code from

https://github.com/ursa-labs/arrow-r-nightly

which is made available under the Apache License 2.0.

--------------------------------------------------------------------------------
.github/actions/sync-nightlies/action.yml  (some portions)

Some portions of this file are derived from code from

https://github.com/JoshPiper/rsync-docker

which is made available under the MIT license

Copyright (c) 2020 Joshua Piper

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
```

```
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

--------------------------------------------------------------------------------
.github/actions/sync-nightlies/action.yml (some portions)

Some portions of this file are derived from code from

https://github.com/burnett01/rsync-deployments

which is made available under the MIT license

Copyright (c) 2019-2022 Contention
Copyright (c) 2019-2022 Burnett01

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
```

```
================================================================================
================================================================================
```

Avro for cpp

```
                                 Apache License
                           Version 2.0, January 2004
                        https://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

--------------------------------------------------------------------------
License for the m4 macros used by the C++ implementation:

Files:
* lang/c++/m4/m4_ax_boost_system.m4
  Copyright (c) 2008 Thomas Porschberg <thomas@randspringer.de>
  Copyright (c) 2008 Michael Tindal
  Copyright (c) 2008 Daniel Casimiro <dan.casimiro@gmail.com>
* lang/c++/m4/m4_ax_boost_asio.m4
  Copyright (c) 2008 Thomas Porschberg <thomas@randspringer.de>
  Copyright (c) 2008 Pete Greenwell <pete@mu.org>
* lang/c++/m4/m4_ax_boost_filesystem.m4
  Copyright (c) 2009 Thomas Porschberg <thomas@randspringer.de>
```

```
  Copyright (c) 2009 Michael Tindal
  Copyright (c) 2009 Roman Rybalko <libtorrent@romanr.info>
* lang/c++/m4/m4_ax_boost_thread.m4
  Copyright (c) 2009 Thomas Porschberg <thomas@randspringer.de>
  Copyright (c) 2009 Michael Tindal
* lang/c++/m4/m4_ax_boost_regex.m4
  Copyright (c) 2008 Thomas Porschberg <thomas@randspringer.de>
  Copyright (c) 2008 Michael Tindal
* lang/c++/m4/m4_ax_boost_base.m4
  Copyright (c) 2008 Thomas Porschberg <thomas@randspringer.de>

License text:
| Copying and distribution of this file, with or without modification, are
| permitted in any medium without royalty provided the copyright notice
| and this notice are preserved. This file is offered as-is, without any
| warranty.

------------------------------------------------------------------------
License for the AVRO_BOOT_NO_TRAIT code in the C++ implementation:
File: lang/c++/api/Boost.hh

| Boost Software License - Version 1.0 - August 17th, 2003
|
| Permission is hereby granted, free of charge, to any person or organization
| obtaining a copy of the software and accompanying documentation covered by
| this license (the "Software") to use, reproduce, display, distribute,
| execute, and transmit the Software, and to prepare derivative works of the
| Software, and to permit third-parties to whom the Software is furnished to
| do so, all subject to the following:
|
| The copyright notices in the Software and this entire statement, including
| the above license grant, this restriction and the following disclaimer,
| must be included in all copies of the Software, in whole or in part, and
| all derivative works of the Software, unless such copies or derivative
| works are solely in the form of machine-executable object code generated by
| a source language processor.
|
| THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
| IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
| FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
| SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
| FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
| ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
| DEALINGS IN THE SOFTWARE.
```

==========
==========

bzip2-libs

```
This program, "bzip2", the associated library "libbzip2", and all
documentation, are copyright (C) 1996-2010 Julian R Seward.  All
rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.

2. The origin of this software must not be misrepresented; you must
   not claim that you wrote the original software.  If you use this
   software in a product, an acknowledgment in the product
   documentation would be appreciated but is not required.
```

```
3. Altered source versions must be plainly marked as such, and must
   not be misrepresented as being the original software.

4. The name of the author may not be used to endorse or promote
   products derived from this software without specific prior written
   permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS
OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, jseward@bzip.org
bzip2/libbzip2 version 1.0.6 of 6 September 2010
```

==========
==========

compile time regular expressions

```
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
```

==========
==========

cornac

```
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

4th party dependencies
----------------------
numpy
== License
Copyright (c) 2005-2025, NumPy Developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
```

```
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.

    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
== Copyright Notices
.
.
--------------------------------(separator)--------------------------------
powerlaw
URL: https://github.com/jeffalstott/powerlaw

--------------------------------(separator)--------------------------------
scipy
== License
Copyright (c) 2001-2002 Enthought, Inc. 2003, SciPy Developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.

3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

cryptography

```
                                 Apache License
                           Version 2.0, January 2004
```

```
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

4th party dependencies
----------------------
pycparser
pycparser -- A C parser in Python
Copyright (c) 2008-2022, Eli Bendersky
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its contributors may
  be used to endorse or promote products derived from this software without
  specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
================================================================================
================================================================================
```

Cython

```
Copyright: cython.org
License: Apache 2.0
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

The original Pyrex code as of 2006-04 is licensed under the following
license: "Copyright stuff: Pyrex is free of restrictions. You may use,
redistribute, modify and distribute modified versions."

-----------------

Cython, which derives from Pyrex, is licensed under the Apache 2.0
Software License.  More precisely, all modifications and new code
made to go from Pyrex to Cython are so licensed.

See LICENSE.txt for more details.

The output of a Cython compilation is NOT considered a derivative
work of Cython.  Specifically, though the compilation process may
embed snippets of varying lengths into the final output, these
snippets, as embedded in the output, do not encumber the resulting
output with any license restrictions.
```

```
================================================================================
================================================================================
```

dask

```
 Copyright (c) 2014, Anaconda, Inc. and contributors
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.

* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Fourth-party dependencies
-------------------------
click
-----
Copyright 2014 Pallets

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

    Redistributions of source code must retain the above copyright notice,
    this list of conditions and the following disclaimer.
    Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
    documentation and/or other materials provided with the distribution.
    Neither the name of the copyright holder nor the names of its contributors
    may be used to endorse or promote products derived from this software
    without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

----------------------------------------------------------------

cloudpickle
```

```
----------
This module was extracted from the `cloud` package, developed by
PiCloud, Inc.

Copyright (c) 2015, Cloudpickle contributors.
Copyright (c) 2012, Regents of the University of California.
Copyright (c) 2009 PiCloud, Inc. http://www.picloud.com.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of the University of California, Berkeley nor the
      names of its contributors may be used to endorse or promote
      products derived from this software without specific prior written
      permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----------------------------------------------------------------

fsspec

BSD 3-Clause License

Copyright (c) 2018, Martin Durant
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.

* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
----------------------------------------------------------------
importlib_metadata

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
----------------------------------------------------------------

packaging
---------
This software is made available under the terms of *either* of the licenses
found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made
under the terms of *both* these licenses.

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


Copyright (c) Donald Stufft and individual contributors.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.

    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----------------------------------------------------------------

partd
-----
Copyright (c) 2015, Continuum Analytics, Inc. and contributors
All rights reserved.

Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
```

```
Neither the name of Continuum Analytics nor the names of any contributors
may be used to endorse or promote products derived from this software
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
THE POSSIBILITY OF SUCH DAMAGE.

----------------------------------------------------------------------

toolz
-----
Copyright (c) 2013 Matthew Rocklin

All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of toolz nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.


THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

----------------------------------------------------------------------

pyyaml
Copyright (c) 2017-2021 Ingy döt Net
Copyright (c) 2006-2016 Kirill Simonov

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
```

```
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
```

```
================================================================================
================================================================================
```

distributed

```
 Copyright (c) 2015-2017, Anaconda, Inc. and contributors
All rights reserved.

Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.

Neither the name of Anaconda nor the names of any contributors
may be used to endorse or promote products derived from this software
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
THE POSSIBILITY OF SUCH DAMAGE.

Fourth-party dependencies
-------------------------

click
-----
Copyright 2014 Pallets

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
Neither the name of the copyright holder nor the names of its contributors
may be used to endorse or promote products derived from this software
without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
```

```
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----------------------------------------------------------------

cloudpickle
-----------
This module was extracted from the `cloud` package, developed by
PiCloud, Inc.

Copyright (c) 2015, Cloudpickle contributors.
Copyright (c) 2012, Regents of the University of California.
Copyright (c) 2009 PiCloud, Inc. http://www.picloud.com.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of the University of California, Berkeley nor the
      names of its contributors may be used to endorse or promote
      products derived from this software without specific prior written
      permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----------------------------------------------------------------

dask
----
BSD 3-Clause License

Copyright (c) 2014, Anaconda, Inc. and contributors
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.

* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
```

```
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----------------------------------------------------------------------

fsspec
------
BSD 3-Clause License

Copyright (c) 2018, Martin Durant
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.

* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----------------------------------------------------------------------

packaging
---------
This software is made available under the terms of *either* of the licenses
found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made
under the terms of *both* these licenses.

 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
----------------------------------------------------------------------

pyparsing
---------
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
```

```
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

----------------------------------------------------------------

partd
-----
Copyright (c) 2015, Continuum Analytics, Inc. and contributors
All rights reserved.

Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.

Neither the name of Continuum Analytics nor the names of any contributors
may be used to endorse or promote products derived from this software
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
THE POSSIBILITY OF SUCH DAMAGE.

----------------------------------------------------------------

locket
------
Copyright (c) 2012, Michael Williamson
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
```

```
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----------------------------------------------------------------

toolz
-----
Copyright (c) 2013 Matthew Rocklin

All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of toolz nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.


THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

----------------------------------------------------------------

pyyaml
------
Copyright (c) 2017-2021 Ingy döt Net
Copyright (c) 2006-2016 Kirill Simonov

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

----------------------------------------------------------------
```

```
jinja2
------
Copyright 2007 Pallets

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in
the documentation and/or other materials provided with the distribution.
Neither the name of the copyright holder nor the names of its
contributors may be used to endorse or promote products derived
from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----------------------------------------------------------------------

MarkupSafe
----------
Copyright 2010 Pallets

Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the
following conditions are met:

Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in
the documentation and/or other materials provided with the distribution.
Neither the name of the copyright holder nor the names of its
contributors may be used to endorse or promote products derived
from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----------------------------------------------------------------------

msgpack
-------
```

```
Copyright (C) 2008-2011 INADA Naoki <songofacandy@gmail.com>

   Licensed under the Apache License, Version 2.0 (the "License");
   you may not use this file except in compliance with the License.
   You may obtain a copy of the License at

       http://www.apache.org/licenses/LICENSE-2.0

   Unless required by applicable law or agreed to in writing, software
   distributed under the License is distributed on an "AS IS" BASIS,
   WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
   See the License for the specific language governing permissions and
   limitations under the License.

------------------------------------------------------------------

psutil
------
BSD 3-Clause License

Copyright (c) 2009, Jay Loden, Dave Daeschler, Giampaolo Rodola'
All rights reserved.

Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.

 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.

 * Neither the name of the psutil authors nor the names of its contributors
   may be used to endorse or promote products derived from this software without
   specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

------------------------------------------------------------------

sortedcontainers
----------------
Copyright 2014-2019 Grant Jenks

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

A copy of the Apache License v2.0, January 2004 license can be found
```

```
in the 'Standard Licenses' section

-----------------------------------------------------------------

tblib
-----
BSD 2-Clause License

Copyright (c) 2013-2022, Ionel Cristian Mărie#.
All rights reserved.

Redistribution and use in source and binary forms,
with or without modification, are permitted provided that the
following conditions are met:

1. Redistributions of source code must retain the above
copyright notice, this list of conditions and the following
disclaimer.

2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials
provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----------------------------------------------------------------

tornado
-------
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
-----------------------------------------------------------------

urllib3
-------
MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
```

```
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

-----------------------------------------------------------------

zict
----
Copyright (c) 2016 Matthew Rocklin

All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.


THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
```

drain3

```
 MIT License

Copyright (c) 2020-2022 International Business Machines
and the Drain3 project contributors.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
```

```
4th party Dependencies
----------------------

cachetools
----------
The MIT License (MIT)

Copyright (c) 2014-2024 Thomas Kemmer

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

jsonpickle
----------
Copyright (C) 2008 John Paulett (john -at- paulett.org)
Copyright (C) 2009-2021 David Aguilar (davvid -at- gmail.com)

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.

3. Neither the name of the copyright holder nor the names of its
contributors may be used to endorse or promote products derived from this
software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE,
EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

eigen

```
//
// Copyright (C) 2009 Gael Guennebaud <gael.guennebaud@inria.fr>
//
// This Source Code Form is subject to the terms of the Mozilla
// Public License v. 2.0. If a copy of the MPL was not distributed
// with this file, You can obtain one at http://mozilla.org/MPL/2.0/.
```

```
Some source files are under different copyright  and licenses as follows:

The following files:
  Eigen/src/SVD/JacobiSVD_LAPACKE.h
  Eigen/src/QR/HouseholderQR_LAPACKE.h
  Eigen/src/PardisoSupport/PardisoSupport.h
  Eigen/src/LU/PartialPivLU_LAPACKE.h
  Eigen/src/Eigenvalues/SelfAdjointEigenSolver_LAPACKE.h
  Eigen/src/Eigenvalues/ComplexSchur_LAPACKE.h
  Eigen/src/Core/util/MKL_support.h
  Eigen/src/Core/products/TriangularSolverMatrix_BLAS.h
  Eigen/src/Core/products/TriangularMatrixVector_BLAS.h
  Eigen/src/Core/products/TriangularMatrixMatrix_BLAS.h
  Eigen/src/Core/products/SelfadjointMatrixVector_BLAS.h
  Eigen/src/Core/products/GeneralMatrixVector_BLAS.h
  Eigen/src/Core/products/GeneralMatrixMatrixTriangular_BLAS.h
are uder:
/*********************************************************************
  Copyright (c) 2011, Intel Corp. All rights reserved.

  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:

    * Redistributions of source code must retain the above copyright notice,
      this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of Intel Corporation nor the names of its contributors
      may be used to endorse or promote products derived from this software
      without specific prior written permission.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
  CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
  ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
  THE POSSIBILITY OF SUCH DAMAGE.

Eigen/src/misc/lapacke.h
  Copyright (c) 2010, Intel Corp. All rights reserved.
(same BSD license as above)

Eigen/src/Core/Assign_MKL.h
 Copyright (c) 2011, Intel Corporation. All rights reserved.
 Copyright (C) 2015 Gael Guennebaud <gael.guennebaud@inria.fr>
(same BSD license as above)

Eigen/src/Core/arch/SYCL/SyclMemoryModel.h
/*************************************************************************
 *  Copyright (C) 2017 Codeplay Software Limited
 *  This Source Code Form is subject to the terms of the Mozilla
 *  Public License v. 2.0. If a copy of the MPL was not distributed
 *  with this file, You can obtain one at http://mozilla.org/MPL/2.0/.
 *
 *
 *  SyclMemoryModel.h
 *
 *  Description:
 *    Interface for SYCL buffers to behave as a non-dereferenceable pointer
 *    Interface for Placeholder accessor to behave as a pointer on both host
 *    and device
```

```
 *
 * Authors:
 *
 *    Ruyman Reyes   Codeplay Software Ltd.
 *    Mehdi Goli     Codeplay Software Ltd.
 *    Vanya Yaneva   Codeplay Software Ltd.
 *
 ****************************************************************************/

Eigen/src/Core/arch/Default/BFloat16.h
--------------------------------------
/* Copyright 2017 The TensorFlow Authors. All Rights Reserved.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
==============================================================================*/

COPYING.README File
-------------------
Eigen is primarily MPL2 licensed. See COPYING.MPL2 and these links:
  http://www.mozilla.org/MPL/2.0/
  http://www.mozilla.org/MPL/2.0/FAQ.html

Some files contain third-party code under BSD or LGPL licenses, whence the other
COPYING.* files here.

All the LGPL code is either LGPL 2.1-only, or LGPL 2.1-or-later.
For this reason, the COPYING.LGPL file contains the LGPL 2.1 text.

If you want to guarantee that the Eigen code that you are #including is licensed
under the MPL2 and possibly more permissive licenses (like BSD), #define this
preprocessor symbol:
  EIGEN_MPL2_ONLY
For example, with most compilers, you could add this to your project CXXFLAGS:
  -DEIGEN_MPL2_ONLY
This will cause a compilation error to be generated if you #include any code that is
LGPL licensed.



COPYING.BSD
-----------
/*
 Copyright (c) 2011, Intel Corporation. All rights reserved.

 Redistribution and use in source and binary forms, with or without modification,
 are permitted provided that the following conditions are met:

 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name of Intel Corporation nor the names of its contributors may
   be used to endorse or promote products derived from this software without
   specific prior written permission.

 THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
```

```
 ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR
 ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
 ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
*/

COPYING.APACHE
--------------
/*
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
```

==========
==========

FastPFOR C++ Library

```
/**
 * This code is released under the
 * Apache License Version 2.0 http://www.apache.org/licenses/.
 *
 * (c) Daniel Lemire, http://lemire.me/en/
 */

Apache License
Version 2.0, January 2004
http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
```

==========
==========

grpc

```
 Copyright 2014 gRPC authors.
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
    http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
-------------------------------------------------------------
```

```
BSD 3-Clause License
Copyright 2016, Google Inc.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its
contributors may be used to endorse or promote products derived from this
software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
THE POSSIBILITY OF SUCH DAMAGE.
-------------------------------------------------------------

Mozilla Public License Version 2.0

A copy of the Mozilla Public License 2.0  license can be found
in the 'Standard Licenses' section

4th party Libraries
===================
c-ares-cares-1_24_0.tar
-----------------------
MIT License
Copyright (c) 1998 Massachusetts Institute of Technology
Copyright (c) 2007 - 2023 Daniel Stenberg with many contributors, see AUTHORS
file.
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice (including the next
paragraph) shall be included in all copies or substantial portions of the
Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
-------------------------------------------------------------------------------
abseil-cpp-20230802.1.tar.gz
----------------------------
Header from source file
-----------------------
//
// Copyright 2017 The Abseil Authors.
//
// Licensed under the Apache License, Version 2.0 (the "License");
// you may not use this file except in compliance with the License.
// You may obtain a copy of the License at
//
//      https://www.apache.org/licenses/LICENSE-2.0
```

```
//
// Unless required by applicable law or agreed to in writing, software
// distributed under the License is distributed on an "AS IS" BASIS,
// WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
// See the License for the specific language governing permissions and
// limitations under the License.
//
License:
                                Apache License
                           Version 2.0, January 2004
                        https://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

--------------------------------------------------------------------------------
Protobuf - C++
--------------
Copyright 2008 Google Inc.  All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
    * Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Code generated by the Protocol Buffer compiler is owned by the owner
of the input file used when generating it.  This code is not
standalone and requires a support library to be linked with it.  This
support library is itself covered by the above license.
re2
----
// Copyright (c) 2009 The RE2 Authors. All rights reserved.
//
// Redistribution and use in source and binary forms, with or without
// modification, are permitted provided that the following conditions are
// met:
//
//    * Redistributions of source code must retain the above copyright
// notice, this list of conditions and the following disclaimer.
//    * Redistributions in binary form must reproduce the above
// copyright notice, this list of conditions and the following disclaimer
// in the documentation and/or other materials provided with the
// distribution.
//    * Neither the name of Google Inc. nor the names of its
// contributors may be used to endorse or promote products derived from
// this software without specific prior written permission.
//
// THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
// "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
// LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
```

```
// A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
// OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
// SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
// LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
// DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
// THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
// (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
// OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

imbalanced-learn

```
Copyright (C) 2008 Stefan van der Walt <stefan@mentat.za.net>, Pauli Virtanen <pav@iki.fi>
Copyright (c) 2014-2020 The imbalanced-learn developers.
Copyright 2014 Steven Loria

The MIT License (MIT)
Copyright (c) 2014-2020 The imbalanced-learn developers.
All rights reserved.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

4th Party Dependencies
----------------------
joblib
-------
Copyright notice(s):
Copyright (c) 2008-2021, The joblib developers.

All rights reserved.

License fulltext:
BSD 3-Clause License
Copyright (c) 2008-2021, The joblib developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
```

```
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

numpy
-----
Copyright (c) 1992-2013 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                        reserved.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura, All rights reserved.
Copyright (c) 2005-2017, NumPy Developers. All rights reserved.
Copyright 2010-2012, D. E. Shaw Research.
All rights reserved.
Copyright (c) 2008 Ian Bicking and Contributors
Copyright (c) 2018 Melissa E. O'Neill
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
Copyright (C) 2010 The Android Open Source Project
Copyright (c) 2005-2022, NumPy Developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----
This binary distribution of NumPy also bundles the following software:
Name: OpenBLAS
Files: .libs/libopenb*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
```

```
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

APACK
-----
Files: .libs/libopenb*.so
Description: bundled in OpenBLAS
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.


lapack-lite
-----------
License: BSD-3-Clause
Copyright (c) 1992-2013 The University of Tennessee and The University
```

```
                       of Tennessee Research Foundation.  All rights
                       reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                       rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                       reserved.
Additional copyrights may follow

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.

- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


tempita
-------
Copyright (c) 2008 Ian Bicking and Contributors

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
```

```
dragon4
-------
Copyright (c) 2014 Ryan Juckett

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.


libdivide
---------
Copyright (C) 2010 - 2019 ridiculous_fish, <libdivide@ridiculousfish.com>
Copyright (C) 2016 - 2019 Kim Walisch, <kim.walisch@gmail.com>

This software is provided 'as-is', without any express or implied
warranty.  In no event will the authors be held liable for any damages
arising from the use of this software.

Permission is granted to anyone to use this software for any purpose,
including commercial applications, and to alter it and redistribute it
freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not
    claim that you wrote the original software. If you use this software
    in a product, an acknowledgment in the product documentation would be
    appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be
    misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.


--------------------------------------------------------------------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.
--------------------------------------------------------------------------------
Name: SPLITMIX64
License: BSD 3-Clause

Written in 2015 by Sebastiano Vigna (vigna@acm.org)

To the extent possible under law, the author has dedicated all copyright
and related and neighboring rights to this software to the public domain
worldwide. This software is distributed without any warranty.

See http://creativecommons.org/publicdomain/zero/1.0/.


SFC64
-----
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.

The MIT License
```

```
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.

https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083

Copyright (c) 2018 Melissa E. O'Neill

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.


PHILOX
------
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

   - Redistributions of source code must retain the above copyright
   notice, this list of conditions, and the following disclaimer.

   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions, and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.

    - Neither the name of D. E. Shaw Research nor the names of
    its contributors may be used to endorse or promote products
    derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN
IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


PCG64
-----
PCG Random Number Generation for C.

Copyright 2014 Melissa O'Neill oneill@pcg-random.org

Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
```

```
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.


MT19937
-------
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the original
design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
   -  Redistributions of source code must retain the above
   copyright notice, this list of conditions and the following disclaimer.
   -  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
    - The names of its contributors may not be used to endorse or promote
    products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Original algorithm for the implementation of rk_interval function from
Richard J. Wagner's implementation of the Mersenne Twister RNG, optimised by
Magnus Jonsson.

Constants used in the rk_double implementation by Isaku Wada.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF
```

```
OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.


Julia
-----
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski, Viral B. Shah,
and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.


Random
------
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com

Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal with the Software without restriction, including without
limitation the rights to use, copy, modify, merge, publish, distribute,
sublicense, and/or sell copies of the Software, and to permit persons
to whom the Software is furnished to do so, subject to the following
conditions:

Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimers.

Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimers in
the documentation and/or other materials provided with the distribution.

Neither the names of Kevin Sheppard, nor the names of any contributors
may be used to endorse or promote products derived from this Software
without specific prior written permission.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE
FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF
CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.

Copyright (c) 2019 Kevin Sheppard. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    - Redistributions of source code must retain the above copyright notice,
    this list of conditions and the following disclaimer.
    - Redistributions in binary form must reproduce the above copyright notice,
```

```
    this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
    - Neither the name of the copyright holder nor the names of its contributors
    may be used to endorse or promote products derived from this software without
    specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original sources, often the
algorithm's designer. Component licenses are located with the component code.


nympy.core.ma
-------------
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.

 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

svml
----
Copyright (c) 2005-2021, NumPy Developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
```

```
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


scikit-learn
------------
Copyright (c) 2007-2021 The scikit-learn developers.
Copyright (c) 2007-2014 The LIBLINEAR Project.
# Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010,
# 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018 Python Software Foundation;
# All Rights Reserved
Copyright (c) 2011 David Warde-Farley <wardefar at iro dot umontreal dot ca>
Copyright (C) 2007-2009 Cournapeau David <cournape@gmail.com>
Copyright (c) 2000-2009 Chih-Chung Chang and Chih-Jen Lin
All rights reserved.
# Copyright (c) 2011, 2012
# Authors: Pietro Berkes,
#          Andreas Muller
Copyright (c) 2011 Olivier Grisel <olivier.grisel@ensta.org>
Copyright (c) 2007 David Cournapeau <cournape@gmail.com>
Copyright (c) 2003-2016  Paul T. McGuire
Copyright (c) 2007-2024 The scikit-learn developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

scipy
-----
Copyright (c) 2001-2002 Enthought, Inc. 2003-2022, SciPy Developers.
All rights reserved.

Jamfile.v2:# Copyright Daryle Walker, Hubert Holin, John Maddock 2006 - 2007
acosh_data.ipp:// Copyright John Maddock 2008.
acosh_test.hpp://  (C) Copyright Hubert Holin 2003.
almost_equal.ipp:// Copyright (c) 2006 Johan Rade
asinh_data.ipp:// Copyright John Maddock 2008.
asinh_test.hpp://  (C) Copyright Hubert Holin 2003.
assoc_legendre_p.ipp://  (C) Copyright John Maddock 2006-7.
atanh_data.ipp:// Copyright John Maddock 2008.
atanh_test.hpp://  (C) Copyright Hubert Holin 2003.
bessel_i_data.ipp://  Copyright (c) 2007 John Maddock
```

```
bessel_i_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_large_data.ipp://  Copyright (c) 2007 John Maddock
bessel_k_data.ipp://  Copyright (c) 2007 John Maddock
bessel_k_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_y01_data.ipp://  Copyright (c) 2007 John Maddock
bessel_yn_data.ipp://  Copyright (c) 2007 John Maddock
bessel_yv_data.ipp://  Copyright (c) 2007 John Maddock
beta_exp_data.ipp://  (C) Copyright John Maddock 2006.
beta_med_data.ipp://  (C) Copyright John Maddock 2006.
beta_small_data.ipp://  (C) Copyright John Maddock 2006.
binomial_data.ipp://  (C) Copyright John Maddock 2006-7.
binomial_large_data.ipp://  (C) Copyright John Maddock 2006-7.
binomial_quantile.ipp://  (C) Copyright John Maddock 2006-7.
cbrt_data.ipp://  (C) Copyright John Maddock 2006-7.
common_factor_test.cpp://  (C) Copyright Daryle Walker 2001, 2006.
compile_test/tools_rational_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_real_cast_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_remez_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_chi_squared_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_complement_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sign_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_digamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_trunc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/constants_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/sf_sinc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_binomial_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_binomial_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_test_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_normal_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sinhc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sin_pi_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sph_harm_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_poisson_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/test_traits.cpp://  Copyright John Maddock 2007.
compile_test/dist_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_cos_pi_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_logistic_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_fpclassify_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_atanh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_precision_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hankel_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/sf_cbrt_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_beta_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_legendre_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_stats_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_polynomial_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_config_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_exponential_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_students_t_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_inv_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_acosh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_beta_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_fisher_f_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_triangular_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/instantiate.hpp://  Copyright John Maddock 2006.
compile_test/instantiate.hpp://  Copyright Paul A. Bristow 2007, 2010.
compile_test/tools_solve_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_next_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/distribution_concept_check.cpp://  Copyright John Maddock 2006.
compile_test/sf_laguerre_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tr1_incl_test.cpp://  Copyright John Maddock 2008.
```

```
compile_test/sf_ellint_rj_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_chi_squ_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_skew_norm_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_modf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_find_location_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_acos_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rd_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_roots_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_test_data_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_abs_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_t_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_factorials_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_atan_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_powm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hypot_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_pareto_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_round_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_weibull_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/std_real_concept_check.cpp://  Copyright John Maddock 2006.
compile_test/dist_hypergeo_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_inv_chi_sq_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sqrt1pm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_log1p_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_jacobi_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/dist_neg_binom_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_f_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_find_scale_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_bessel_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_minima_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_asin_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_extreme_val_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_lanczos_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_uniform_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/test_compile_result.hpp://  Copyright John Maddock 2007.
compile_test/tools_series_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_3_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_2_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hermite_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/poison.hpp://  Copyright John Maddock 2013.
compile_test/sf_zeta_incl_test.cpp://  Copyright John Maddock 2007.
compile_test/dist_laplace_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_expint_incl_test.cpp://  Copyright John Maddock 2007.
compile_test/sf_expm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_bernoulli_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_asinh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_beta_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_fraction_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_owens_t_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/tools_toms748_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_erf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/main.cpp://  Copyright John Maddock 2009.
compile_test/sf_math_fwd_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_airy_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/dist_lognormal_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_cauchy_incl_test.cpp://  Copyright John Maddock 2006.
complex_test.cpp://  (C) Copyright John Maddock 2005.
digamma_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_neg_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_root_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_small_data.ipp://  (C) Copyright John Maddock 2006-7.
e_float_concept_check.cpp://  Copyright John Maddock 2011.
ellint_e2_data.ipp://  Copyright (c) 2006 John Maddock
ellint_e_data.ipp://  Copyright (c) 2006 John Maddock
ellint_f_data.ipp://  Copyright (c) 2006 John Maddock
```

```
ellint_k_data.ipp://  (C) Copyright John Maddock 2006-7.
ellint_pi2_data.ipp://  Copyright (c) 2006 John Maddock
ellint_pi3_data.ipp://  Copyright (c) 2006 John Maddock
ellint_pi3_large_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rc_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rd_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rf_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rj_data.ipp://  Copyright (c) 2006 John Maddock
erf_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_large_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_small_data.ipp://  (C) Copyright John Maddock 2006.
erfc_inv_big_data.ipp://  (C) Copyright John Maddock 2006-7.
erfc_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
expint_1_data.ipp://  Copyright John Maddock 2008.
expint_data.ipp://  Copyright John Maddock 2008.
expint_small_data.ipp://  Copyright John Maddock 2008.
expinti_data.ipp://  Copyright John Maddock 2008.
expinti_data_double.ipp://  Copyright John Maddock 2008.
expinti_data_long.ipp://  Copyright John Maddock 2008.
functor.hpp://  (C) Copyright John Maddock 2007.
gamma_inv_big_data.ipp://  (C) Copyright John Maddock 2006-7.
gamma_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
gamma_inv_small_data.ipp://  (C) Copyright John Maddock 2006-7.
handle_test_result.hpp://  (C) Copyright John Maddock 2006-7.
hermite.ipp://  (C) Copyright John Maddock 2006-7.
hypergeometric_dist_data2.ipp:// Copyright John Maddock 2008
hypergeometric_test_data.ipp:// Copyright Gautam Sewani 2008
hypot_test.cpp://  (C) Copyright John Maddock 2005.
ibeta_data.ipp://  (C) Copyright John Maddock 2006.
ibeta_int_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_inva_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_large_data.ipp://  (C) Copyright John Maddock 2006.
ibeta_small_data.ipp://  (C) Copyright John Maddock 2006.
igamma_big_data.ipp://  (C) Copyright John Maddock 2006.
igamma_int_data.ipp://  (C) Copyright John Maddock 2006-7.
igamma_inva_data.ipp://  (C) Copyright John Maddock 2006-7.
igamma_med_data.ipp://  (C) Copyright John Maddock 2006.
igamma_small_data.ipp://  (C) Copyright John Maddock 2006.
jacobi_elliptic.ipp:// Copyright John Maddock 2012.
jacobi_elliptic_small.ipp:// Copyright John Maddock 2012.
jacobi_large_phi.ipp:// Copyright John Maddock 2012.
jacobi_near_1.ipp:// Copyright John Maddock 2012.
laguerre2.ipp://  (C) Copyright John Maddock 2006-7.
laguerre3.ipp://  (C) Copyright John Maddock 2006-7.
legendre_p.ipp://  (C) Copyright John Maddock 2006-7.
legendre_p_large.ipp://  (C) Copyright John Maddock 2006-7.
log1p_expm1_data.ipp://  (C) Copyright John Maddock 2006-7.
log1p_expm1_test.cpp://  Copyright John Maddock 2005.
log1p_expm1_test.cpp://  Copyright Paul A. Bristow 2010
log1p_expm1_test.hpp://  Copyright John Maddock 2005.
log1p_expm1_test.hpp://  Copyright Paul A. Bristow 2010
mpfr_concept_check.cpp://  Copyright John Maddock 2007-8.
mpreal_concept_check.cpp://  Copyright John Maddock 2007-8.
multiprc_concept_check_1.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_2.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_3.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_4.cpp://  Copyright John Maddock 2013.
ncbeta.ipp://  Copyright John Maddock 2008.
ncbeta_big.ipp://  Copyright John Maddock 2008.
nccs.ipp://  Copyright John Maddock 2008.
nccs_big.ipp:// Copyright John Maddock 2008.
nct.ipp:// Copyright John Maddock 2008.
nct_asym.ipp:// Copyright John Maddock 2012.
nct_small_delta.ipp:// Copyright John Maddock 2012.
negative_binomial_quantile.ipp://  (C) Copyright John Maddock 2006-7.
```

```
ntl_concept_check.cpp://  Copyright John Maddock 2007-8.
ntl_concept_check.cpp://  Copyright Paul A. Bristow 2009, 2011
owens_t.ipp://  Copyright John Maddock 2012.
owens_t_T7.hpp:// Copyright (C) Benjamin Sobotta 2012
owens_t_large_data.ipp://  Copyright John Maddock 2012.
pch.hpp://  Copyright John Maddock 2008.
pch_light.hpp://  Copyright John Maddock 2008.
poisson_quantile.ipp://  (C) Copyright John Maddock 2006-7.
pow_test.cpp://  (C) Copyright Bruno Lalande 2008.
powm1_sqrtp1m1_test.cpp://  (C) Copyright John Maddock 2006.
powm1_sqrtp1m1_test.hpp://  Copyright John Maddock 2006.
s_.ipp:// Copyright (c) 2006 Johan Rade
s_.ipp:// Copyright (c) 2012 Paul A. Bristow
sinc_test.hpp://  (C) Copyright Hubert Holin 2003.
sinhc_test.hpp://  (C) Copyright Hubert Holin 2003.
special_functions_test.cpp://  (C) Copyright Hubert Holin 2003.
special_functions_test.cpp:    BOOST_TEST_MESSAGE("(C) Copyright Hubert Holin 2003-2005.");
sph_bessel_data.ipp://  Copyright (c) 2007 John Maddock
sph_neumann_data.ipp://  Copyright (c) 2007 John Maddock
spherical_harmonic.ipp://  (C) Copyright John Maddock 2006-7.
std_real_concept_check.cpp://  Copyright John Maddock 2006.
table_type.hpp:// Copyright John Maddock 2012.
test_airy.cpp://  Copyright John Maddock 2012
test_archive.cpp:// Copyright (c) 2006 Johan Rade
test_archive.cpp:// Copyright (c) 2011 Paul A. Bristow - filename changes for boost-trunk.
test_basic_nonfinite.cpp:// Copyright (c) 2006 Johan Rade
test_basic_nonfinite.cpp:// Copyright (c) 2011 Paul A. Bristow comments
test_basic_nonfinite.cpp:// Copyright (c) 2011 John Maddock
test_bernoulli.cpp:// Copyright John Maddock 2006.
test_bernoulli.cpp:// Copyright  Paul A. Bristow 2007, 2012.
test_bessel_airy_zeros.cpp://  Copyright John Maddock 2013
test_bessel_airy_zeros.cpp://  Copyright Christopher Kormanyos 2013.
test_bessel_airy_zeros.cpp://  Copyright Paul A. Bristow 2013.
test_bessel_hooks.hpp://  (C) Copyright John Maddock 2007.
test_bessel_i.cpp://  (C) Copyright John Maddock 2007.
test_bessel_i.hpp://  (C) Copyright John Maddock 2007.
test_bessel_j.cpp://  (C) Copyright John Maddock 2007.
test_bessel_j.hpp://  (C) Copyright John Maddock 2007.
test_bessel_k.cpp://  Copyright John Maddock 2006, 2007
test_bessel_k.cpp://  Copyright Paul A. Bristow 2007
test_bessel_k.hpp://  (C) Copyright John Maddock 2007.
test_bessel_y.cpp://  (C) Copyright John Maddock 2007.
test_bessel_y.hpp://  (C) Copyright John Maddock 2007.
test_beta.cpp:// Copyright John Maddock 2006.
test_beta.cpp:// Copyright Paul A. Bristow 2007, 2009
test_beta.hpp:// Copyright John Maddock 2006.
test_beta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_beta_dist.cpp:// Copyright John Maddock 2006.
test_beta_dist.cpp:// Copyright  Paul A. Bristow 2007, 2009, 2010, 2012.
test_beta_hooks.hpp://  (C) Copyright John Maddock 2006.
test_binomial.cpp:// Copyright John Maddock 2006.
test_binomial.cpp:// Copyright  Paul A. Bristow 2007.
test_binomial_coeff.cpp://  (C) Copyright John Maddock 2006.
test_binomial_coeff.hpp:// Copyright John Maddock 2006.
test_binomial_coeff.hpp:// Copyright Paul A. Bristow 2007, 2009
test_carlson.cpp://  Copyright 2006 John Maddock
test_carlson.cpp:// Copyright Paul A. Bristow 2007.
test_carlson.hpp:// Copyright John Maddock 2006.
test_carlson.hpp:// Copyright Paul A. Bristow 2007, 2009
test_cauchy.cpp:// Copyright John Maddock 2006, 2007.
test_cauchy.cpp:// Copyright Paul A. Bristow 2007
test_cbrt.cpp://  Copyright John Maddock 2006.
test_cbrt.cpp://  Copyright Paul A. Bristow 2010
test_cbrt.hpp:// Copyright John Maddock 2006.
test_cbrt.hpp:// Copyright Paul A. Bristow 2007, 2009
test_chi_squared.cpp:// Copyright Paul A. Bristow 2006.
test_chi_squared.cpp:// Copyright John Maddock 2007.
```

```
test_classify.cpp://  Copyright John Maddock 2006.
test_classify.cpp://  Copyright Paul A. Bristow 2007
test_common_factor_gmpxx.cpp://  (C) Copyright John Maddock 2010.
test_constant_generate.cpp:// Copyright John Maddock 2010.
test_constants.cpp:// Copyright Paul Bristow 2007, 2011.
test_constants.cpp:// Copyright John Maddock 2006, 2011.
test_digamma.cpp://  (C) Copyright John Maddock 2006.
test_digamma.hpp:// Copyright John Maddock 2006.
test_digamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_dist_overloads.cpp:// Copyright John Maddock 2006.
test_dist_overloads.cpp:// Copyright Paul A. Bristow 2007.
test_ellint_1.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_1.cpp://  Copyright John Maddock 2006, 2007
test_ellint_1.cpp://  Copyright Paul A. Bristow 2007
test_ellint_1.hpp:// Copyright John Maddock 2006.
test_ellint_1.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ellint_2.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_2.cpp://  Copyright John Maddock 2006, 2007
test_ellint_2.cpp://  Copyright Paul A. Bristow 2007
test_ellint_2.hpp:// Copyright John Maddock 2006.
test_ellint_2.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ellint_3.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_3.cpp://  Copyright John Maddock 2006, 2007
test_ellint_3.cpp://  Copyright Paul A. Bristow 2007
test_ellint_3.hpp:// Copyright John Maddock 2006.
test_ellint_3.hpp:// Copyright Paul A. Bristow 2007, 2009
test_erf.cpp://  Copyright John Maddock 2006.
test_erf.cpp://  Copyright Paul A. Bristow 2007
test_erf.hpp:// Copyright John Maddock 2006.
test_erf.hpp:// Copyright Paul A. Bristow 2007, 2009
test_erf_hooks.hpp://  (C) Copyright John Maddock 2006.
test_error_handling.cpp:// Copyright Paul A. Bristow 2006-7.
test_error_handling.cpp:// Copyright John Maddock 2006-7.
test_expint.cpp://  (C) Copyright John Maddock 2007.
test_expint.hpp:// Copyright John Maddock 2006.
test_expint.hpp:// Copyright Paul A. Bristow 2007, 2009
test_expint_hooks.hpp://  (C) Copyright John Maddock 2006.
test_exponential_dist.cpp:// Copyright John Maddock 2006.
test_exponential_dist.cpp:// Copyright Paul A. Bristow 2007.
test_extreme_value.cpp:// Copyright John Maddock 2006.
test_factorials.cpp://  Copyright John Maddock 2006.
test_find_location.cpp:// Copyright John Maddock 2007.
test_find_location.cpp:// Copyright Paul A. Bristow 2007.
test_find_scale.cpp:// Copyright John Maddock 2007.
test_find_scale.cpp:// Copyright Paul A. Bristow 2007.
test_fisher_f.cpp:// Copyright Paul A. Bristow 2006.
test_fisher_f.cpp:// Copyright John Maddock 2007.
test_fisher_f.cpp:   // Distcalc version 1.2 Copyright 2002 H Lohninger, TU Wein
test_gamma.cpp://  (C) Copyright John Maddock 2006.
test_gamma.hpp:// Copyright John Maddock 2006.
test_gamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_gamma_data.ipp://  (C) Copyright John Maddock 2006.
test_gamma_dist.cpp:// Copyright John Maddock 2006.
test_gamma_dist.cpp:// Copyright Paul A. Bristow 2007, 2010.
test_gamma_hooks.hpp://  (C) Copyright John Maddock 2006.
test_geometric.cpp:// Copyright Paul A. Bristow 2010.
test_geometric.cpp:// Copyright John Maddock 2010.
test_hankel.cpp://  Copyright John Maddock 2012
test_hermite.cpp://  Copyright John Maddock 2006, 2007
test_hermite.cpp://  Copyright Paul A. Bristow 2007
test_hermite.hpp:// Copyright John Maddock 2006.
test_hermite.hpp:// Copyright Paul A. Bristow 2007, 2009
test_hypergeometric_dist.cpp:// Copyright John Maddock 2008
test_hypergeometric_dist.cpp:// Copyright Paul A. Bristow
test_hypergeometric_dist.cpp:// Copyright Gautam Sewani
test_ibeta.cpp://  (C) Copyright John Maddock 2006.
test_ibeta.hpp:// Copyright John Maddock 2006.
```

```
test_ibeta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ibeta_inv.cpp://  (C) Copyright John Maddock 2006.
test_ibeta_inv.hpp:// Copyright John Maddock 2006.
test_ibeta_inv.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ibeta_inv_ab.cpp://  (C) Copyright John Maddock 2006.
test_ibeta_inv_ab.hpp:// Copyright John Maddock 2006.
test_ibeta_inv_ab.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma.cpp://  (C) Copyright John Maddock 2006.
test_igamma.hpp:// Copyright John Maddock 2006.
test_igamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma_inv.cpp://  (C) Copyright John Maddock 2006.
test_igamma_inv.hpp:// Copyright John Maddock 2006.
test_igamma_inv.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma_inva.cpp://  (C) Copyright John Maddock 2006.
test_igamma_inva.hpp:// Copyright John Maddock 2006.
test_igamma_inva.hpp:// Copyright Paul A. Bristow 2007, 2009
test_instances/double_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/Jamfile.v2:# Copyright ohn Maddock 2012
test_instances/real_concept_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/pch.hpp://  Copyright John Maddock 2012.
test_instances/ldouble_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/long_double_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/test_instances.hpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instantiate1.cpp://  Copyright John Maddock 2006.
test_instantiate2.cpp://  Copyright John Maddock 2006.
test_inv_hyp.cpp://  (C) Copyright John Maddock 2006.
test_inverse_chi_squared.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_chi_squared.cpp:// Copyright John Maddock 2010.
test_inverse_chi_squared_distribution.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_chi_squared_distribution.cpp:// Copyright John Maddock 2010.
test_inverse_gamma_distribution.cpp:// Copyright Paul A. Bristow 2010.
```

```
test_inverse_gamma_distribution.cpp:// Copyright John Maddock 2010.
test_inverse_gaussian.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_gaussian.cpp:// Copyright John Maddock 2010.
test_jacobi.cpp://  Copyright John Maddock 2012
test_jacobi.hpp:// Copyright John Maddock 2006.
test_jacobi.hpp:// Copyright Paul A. Bristow 2007, 2009
test_laguerre.cpp://  (C) Copyright John Maddock 2006.
test_laguerre.hpp:// Copyright John Maddock 2006.
test_laguerre.hpp:// Copyright Paul A. Bristow 2007, 2009
test_laplace.cpp://  Copyright Thijs van den Berg, 2008.
test_laplace.cpp://  Copyright John Maddock 2008.
test_laplace.cpp://  Copyright Paul A. Bristow 2008, 2009.
test_ldouble_simple.cpp:// Copyright John Maddock 2013.
test_legacy_nonfinite.cpp:// Copyright (c) 2006 Johan Rade
test_legacy_nonfinite.cpp:// Copyright (c) 2011 Paul A. Bristow comments
test_legendre.cpp://  (C) Copyright John Maddock 2006.
test_legendre.hpp:// Copyright John Maddock 2006.
test_legendre.hpp:// Copyright Paul A. Bristow 2007, 2009
test_legendre_hooks.hpp://  (C) Copyright John Maddock 2006.
test_lexical_cast.cpp:// Copyright (c) 2006 Johan Rade
test_lexical_cast.cpp:// Copyright (c) 2011 Paul A. Bristow incorporated Boost.Math
test_logistic_dist.cpp:// Copyright 2008 Gautam Sewani
test_lognormal.cpp:// Copyright John Maddock 2006.
test_lognormal.cpp:// Copyright Paul A. Bristow 2007
test_long_double_support.cpp:// Copyright John Maddock 2009
test_math_fwd.cpp://  Copyright John Maddock 2010.
test_math_fwd.cpp://  Copyright Paul A. Bristow 2010.
test_minima.cpp://  Copyright John Maddock 2006.
test_minima.cpp://  Copyright Paul A. Bristow 2007.
test_nc_beta.cpp:// Copyright John Maddock 2008.
test_nc_chi_squared.cpp:// Copyright John Maddock 2008.
test_nc_f.cpp:// Copyright John Maddock 2008.
test_nc_t.cpp:// Copyright John Maddock 2008, 2012.
test_nc_t.cpp:// Copyright Paul A. Bristow 2012.
test_ncbeta_hooks.hpp://  (C) Copyright John Maddock 2008.
test_nccs_hooks.hpp://  (C) Copyright John Maddock 2008.
test_negative_binomial.cpp:// Copyright Paul A. Bristow 2007.
test_negative_binomial.cpp:// Copyright John Maddock 2006.
test_next.cpp://  (C) Copyright John Maddock 2008.
test_nonfinite_io.cpp:// Copyright 2011 Paul A. Bristow
test_nonfinite_trap.cpp:// Copyright (c) 2006 Johan Rade
test_nonfinite_trap.cpp:// Copyright (c) 2011 Paul A. Bristow To incorporate into Boost.Math
test_normal.cpp:// Copyright Paul A. Bristow 2010.
test_normal.cpp:// Copyright John Maddock 2007.
test_out_of_range.hpp:// Copyright John Maddock 2012.
test_owens_t.cpp:// Copyright Paul A. Bristow 2012.
test_owens_t.cpp:// Copyright Benjamin Sobotta 2012.
test_pareto.cpp:// Copyright Paul A. Bristow 2007, 2009.
test_pareto.cpp:// Copyright John Maddock 2006.
test_poisson.cpp:// Copyright Paul A. Bristow 2007.
test_poisson.cpp:// Copyright John Maddock 2006.
test_policy.cpp:// Copyright John Maddock 2007.
test_policy_2.cpp:// Copyright John Maddock 2007.
test_policy_3.cpp:// Copyright John Maddock 2007.
test_policy_4.cpp:// Copyright John Maddock 2007.
test_policy_5.cpp:// Copyright John Maddock 2007.
test_policy_6.cpp:// Copyright John Maddock 2007.
test_policy_7.cpp:// Copyright John Maddock 2007.
test_policy_8.cpp:// Copyright John Maddock 2007.
test_policy_sf.cpp://  (C) Copyright John Maddock 2007.
test_print_info_on_type.cpp:// Copyright John Maddock 2010.
test_rational_instances/test_rational_ldouble2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float4.cpp://  (C) Copyright John Maddock 2006-7.
```

```
test_rational_instances/test_rational_double5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational.hpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float1.cpp://  (C) Copyright John Maddock 2006-7.
test_rationals.cpp://  (C) Copyright John Maddock 2006.
test_rayleigh.cpp:// Copyright John Maddock 2006.
test_real_concept.cpp:// Copyright John Maddock 2010
test_real_concept_neg_bin.cpp:// Copyright Paul A. Bristow 2010.
test_real_concept_neg_bin.cpp:// Copyright John Maddock 2010.
test_remez.cpp://  Copyright John Maddock 2006
test_remez.cpp://  Copyright Paul A. Bristow 2007
test_roots.cpp://  (C) Copyright John Maddock 2006.
test_round.cpp://  (C) Copyright John Maddock 2007.
test_sign.cpp:#define BOOST_TEST_MAIN// Copyright John Maddock 2008
test_sign.cpp://  (C) Copyright Paul A. Bristow 2011 (added tests for changesign)
test_signed_zero.cpp:// Copyright 2006 Johan Rade
test_signed_zero.cpp:// Copyright 2011 Paul A. Bristow  To incorporate into Boost.Math
test_signed_zero.cpp:// Copyright 2012 Paul A. Bristow with new tests.
test_skew_normal.cpp:// Copyright Paul A. Bristow 2012.
test_skew_normal.cpp:// Copyright John Maddock 2012.
test_skew_normal.cpp:// Copyright Benjamin Sobotta 2012
test_spherical_harmonic.cpp://  (C) Copyright John Maddock 2006.
test_students_t.cpp:// Copyright Paul A. Bristow 2006.
test_students_t.cpp:// Copyright John Maddock 2006.
test_tgamma_ratio.cpp://  (C) Copyright John Maddock 2006.
test_tgamma_ratio.hpp:// Copyright John Maddock 2006.
test_tgamma_ratio.hpp:// Copyright Paul A. Bristow 2007, 2009
test_toms748_solve.cpp://  (C) Copyright John Maddock 2006.
test_tr1.c:/*  (C) Copyright John Maddock 2008.
test_tr1.cpp://  (C) Copyright John Maddock 2008.
test_triangular.cpp:// Copyright Paul Bristow 2006, 2007.
test_triangular.cpp:// Copyright John Maddock 2006, 2007.
test_uniform.cpp:// Copyright Paul Bristow 2007.
test_uniform.cpp:// Copyright John Maddock 2006.
test_weibull.cpp:// Copyright John Maddock 2006, 2012.
test_weibull.cpp:// Copyright Paul A. Bristow 2007, 2012.
test_zeta.cpp://  (C) Copyright John Maddock 2006.
test_zeta.hpp:// Copyright John Maddock 2006.
test_zeta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_zeta_hooks.hpp://  (C) Copyright John Maddock 2006.
tgamma_delta_ratio_data.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_delta_ratio_int.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_delta_ratio_int2.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_ratio_data.ipp://  (C) Copyright John Maddock 2006-7.
zeta_1_below_data.ipp://  Copyright John Maddock 2008.
zeta_1_up_data.ipp://  Copyright John Maddock 2008.
zeta_data.ipp://  Copyright John Maddock 2008.
zeta_neg_data.ipp://  Copyright John Maddock 2008.
ztest_max_digits10.cpp: // Copyright 2010 Paul A. Bristow
zztest_max_digits10.cpp:// Copyright 2010 Paul A. Bristow

Copyright (c) 2001-2002 Enthought, Inc. 2003-2022, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
```

```
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----
This binary distribution of SciPy also bundles the following software:
Name: OpenBLAS
Files: .libs/libopenb*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.

  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:

     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.

     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


LAPACK
------
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
```

```
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:

  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.

  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.

  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.

  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---------- Bundled licenses in scipy (BSD-3-Clause license) [https://github.com/scipy/scipy] ----------
The SciPy repository and source distributions bundle a number of libraries that
are compatibly licensed.  We list these here.



Decorator
---------
Copyright (c) 2005-2018, Michele Simionato
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
Redistributions in bytecode form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in
the documentation and/or other materials provided with the
distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
```

```
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.


ID
--
The present document and all of the software
in the accompanying distribution (which is contained in the directory
id_dist and its subdirectories, or in the file id_dist.tar.gz, is


Copyright (c) 2014 by P.-G. Martinsson, V. Rokhlin,
Y. Shkolnisky, and M. Tygert.

All rights reserved.


Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

* Redistributions of source code must retain the above copyright
notice, this list of conditions, and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright
notice, this list of conditions, and the following disclaimer in the
documentation and/or other materials provided with the distribution.
* None of the names of the copyright holders may be used to endorse
or promote products derived from this software without specific prior
written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNERS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


L-BFGS-B
--------
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

The version included here (in lbfgsb.f) is 3.0 (released April 25, 2011). It was
written by Ciyou Zhu, Richard Byrd, and Jorge Nocedal <nocedal@ece.nwu.edu>. It
```

```
carries the following condition for use:

  """
  This software is freely available, but we expect that all publications
  describing work using this software, or all commercial products using it,
  quote at least one of the references given below. This software is released
  under the BSD License.

  References
    * R. H. Byrd, P. Lu and J. Nocedal. A Limited Memory Algorithm for Bound
      Constrained Optimization, (1995), SIAM Journal on Scientific and
      Statistical Computing, 16, 5, pp. 1190-1208.
    * C. Zhu, R. H. Byrd and J. Nocedal. L-BFGS-B: Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (1997),
      ACM Transactions on Mathematical Software, 23, 4, pp. 550 - 560.
    * J.L. Morales and J. Nocedal. L-BFGS-B: Remark on Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (2011),
      ACM Transactions on Mathematical Software, 38, 1.
  """

LAPJVsp
-------
Copyright 1987-, A. Volgenant/Amsterdam School of Economics,
                 University of Amsterdam

  Distributed under 3-clause BSD license with permission from
  University of Amsterdam.

  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:

  1. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.

  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.

  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
    without specific prior written permission.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
  CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
  ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
  POSSIBILITY OF SUCH DAMAGE.


SuperLU
-------
Copyright (c) 2003, The Regents of the University of California, through
Lawrence Berkeley National Laboratory (subject to receipt of any required
approvals from U.S. Dept. of Energy)

All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

(1) Redistributions of source code must retain the above copyright notice,
```

```
this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
(3) Neither the name of Lawrence Berkeley National Laboratory, U.S. Dept. of
Energy nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


ARPACK
------
Pertains to ARPACK and P_ARPACK

Copyright (c) 1996-2008 Rice University.
Developed by D.C. Sorensen, R.B. Lehoucq, C. Yang, and K. Maschhoff.
All rights reserved.

Arpack has been renamed to arpack-ng.

Copyright (c) 2001-2011 - Scilab Enterprises
Updated by Allan Cornet, Sylvestre Ledru.

Copyright (c) 2010 - Jordi Gutiérrez Hermoso (Octave patch)

Copyright (c) 2007 - Sébastien Fabbro (gentoo patch)

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.

- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Qhull
```

```
-----
 Qhull, Copyright (c) 1993-2020

C.B. Barber
Arlington, MA

and

The National Science and Technology Research Center for
Computation and Visualization of Geometric Structures
(The Geometry Center)
University of Minnesota

email: qhull@qhull.org

This software includes Qhull from C.B. Barber and The Geometry Center.
Qhull is copyrighted as noted above.  Qhull is free software and may
be obtained via http from www.qhull.org.  It may be freely copied, modified,
and redistributed under the following conditions:

1. All copyright notices must remain intact in all files.

2. A copy of this text file must be distributed along with any copies
   of Qhull that you redistribute; this includes copies that you have
   modified, or copies of programs or other software products that
   include Qhull.

3. If you modify Qhull, you must include a notice giving the
   name of the person performing the modification, the date of
   modification, and the reason for such modification.

4. When distributing modified versions of Qhull, or other software
   products that include Qhull, you must provide notice that the original
   source code may be obtained as noted above.

5. There is no warranty or other guarantee of fitness for Qhull, it is
   provided solely "as is".  Bug reports or fixes may be sent to
   qhull_bug@qhull.org; the authors may or may not act on them as
   they desire.

Cephes
------
Distributed under 3-clause BSD license with permission from the author,
see https://lists.debian.org/debian-legal/2004/12/msg00295.html

Cephes Math Library Release 2.8:  June, 2000
Copyright 1984, 1995, 2000 by Stephen L. Moshier

This software is derived from the Cephes Math Library and is
incorporated herein by permission of the author.

All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of the <organization> nor the
      names of its contributors may be used to endorse or promote products
      derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
```

```
DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Faddeeva
--------
  Copyright (c) 2012 Massachusetts Institute of Technology

  Permission is hereby granted, free of charge, to any person obtaining
  a copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
  distribute, sublicense, and/or sell copies of the Software, and to
  permit persons to whom the Software is furnished to do so, subject to
  the following conditions:

  The above copyright notice and this permission notice shall be
  included in all copies or substantial portions of the Software.

  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
  EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
  NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
  LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
  OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
  WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

qd
--
  This work was supported by the Director, Office of Science, Division
  of Mathematical, Information, and Computational Sciences of the
  U.S. Department of Energy under contract numbers DE-AC03-76SF00098 and
  DE-AC02-05CH11231.

  Copyright (c) 2003-2009, The Regents of the University of California,
  through Lawrence Berkeley National Laboratory (subject to receipt of
  any required approvals from U.S. Dept. of Energy) All rights reserved.

  1. Redistribution and use in source and binary forms, with or
  without modification, are permitted provided that the following
  conditions are met:

  (1) Redistributions of source code must retain the copyright
  notice, this list of conditions and the following disclaimer.

  (2) Redistributions in binary form must reproduce the copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.

  (3) Neither the name of the University of California, Lawrence
  Berkeley National Laboratory, U.S. Dept. of Energy nor the names
  of its contributors may be used to endorse or promote products
  derived from this software without specific prior written
  permission.

  2. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
```

```
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

  3. You are under no obligation whatsoever to provide any bug fixes,
  patches, or upgrades to the features, functionality or performance of
  the source code ("Enhancements") to anyone; however, if you choose to
  make your Enhancements available either publicly, or directly to
  Lawrence Berkeley National Laboratory, without imposing a separate
  written license agreement for such Enhancements, then you hereby grant
  the following license: a non-exclusive, royalty-free perpetual license
  to install, use, modify, prepare derivative works, incorporate into
  other computer software, distribute, and sublicense such enhancements
  or derivative works thereof, in binary and source code form.


pypocketfft
-----------
Copyright (C) 2010-2019 Max-Planck-Society All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

    Redistributions of source code must retain the above copyright notice,
    this list of conditions and the following disclaimer.
    Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
    documentation and/or other materials provided with the distribution.
    Neither the name of the copyright holder nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.


uarray
------
Copyright (c) 2018, Quansight-Labs
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.

* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
```

```
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

ampgo
-----
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.


pybind11
--------
  Copyright (c) 2016 Wenzel Jakob <wenzel.jakob@epfl.ch>, All rights reserved.

  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:

  1. Redistributions of source code must retain the above copyright notice, this
     list of conditions and the following disclaimer.

  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
     and/or other materials provided with the distribution.

  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
  FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


HiGHS
-----
Copyright (c) 2021 ERGO-Code

    IPX and BASICLU, Copyright (c) 2018-2021  ERGO-Code
    Used in HiGHS under the MIT license.
```

```
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Boost
-----
Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:

The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Biasedurn
---------

---------- Forwarded message ---------
From: Agner Fog <agner@agner.org>
Date: Wed, Jul 22, 2020 at 8:54 PM
Subject: Re: Add BiasedUrn to SciPy?
To: Matt Haberland <mhaberla@calpoly.edu>
Cc: Warren Weckesser <warren.weckesser@gmail.com>

Dear Matt The C++ code for these distributions without binding to the R project
are available here:
https://www.agner.org/random/stocc.zip
You have my permission to use it in SciPy under the new BSD license.
Best regards,
Agner Fog

On 22/07/2020 17.05, Matt Haberland wrote:
Hi Agner, I'm a maintainer of the Python scientific computing library SciPy,
and I'm working on improving the capabilities of our statistics subpackage
scipy.stats. We'd like to add both Fisher's and Wallenius' noncentral
hypergeometric distributions, but these look quite challenging to implement.
```

```
We found your BiasedUrn package, and we'd love to wrap it, but we can't
include GPL-3 licensed code under our BSD-new license. Would you consider
re-licensing BiasedUrn under a more permissive license, such as BSD-new or
MIT, so we can include it in SciPy?
Thank you for considering it!
Matt
--
Matt Haberland
Assistant Professor
BioResource and Agricultural Engineering
08A-3K, Cal Poly


UNU.RAN
-------
Permission was granted on 23 March 2021 by Josef Leydold
(josef.leydold@wu.ac.at) and Wolfgang Hoermann (hormannw@bound.edu.tr)
to use the UNU.RAN code excluding the uniform random number generator
in src/uniform/mrg31k3p.c (copyright by Renee Touzin)
under the BSD licence. The following files have been removed from the
original library:

    unuran-1.8.1/COPYING
    unuran-1.8.1/INSTALL
    unuran-1.8.1/Makefile.am
    unuran-1.8.1/Makefile.in
    unuran-1.8.1/NEWS
    unuran-1.8.1/UPGRADE
    unuran-1.8.1/acinclude.m4
    unuran-1.8.1/aclocal.m4
    unuran-1.8.1/autoconf/config.guess
    unuran-1.8.1/autoconf/config.sub
    unuran-1.8.1/autoconf/depcomp
    unuran-1.8.1/autoconf/install-sh
    unuran-1.8.1/autoconf/ltmain.sh
    unuran-1.8.1/autoconf/mdate-sh
    unuran-1.8.1/autoconf/missing
    unuran-1.8.1/autogen.sh
    unuran-1.8.1/configure
    unuran-1.8.1/doc/Makefile.am
    unuran-1.8.1/doc/Makefile.in
    unuran-1.8.1/doc/figures/Makefile.am
    unuran-1.8.1/doc/figures/Makefile.in
    unuran-1.8.1/doc/figures/discrete_inversion.eps
    unuran-1.8.1/doc/figures/discrete_inversion.pdf
    unuran-1.8.1/doc/figures/discrete_inversion.png
    unuran-1.8.1/doc/figures/discrete_inversion.txt
    unuran-1.8.1/doc/figures/inversion.eps
    unuran-1.8.1/doc/figures/inversion.pdf
    unuran-1.8.1/doc/figures/inversion.png
    unuran-1.8.1/doc/figures/inversion.txt
    unuran-1.8.1/doc/figures/rejection_from_constant_hat.eps
    unuran-1.8.1/doc/figures/rejection_from_constant_hat.pdf
    unuran-1.8.1/doc/figures/rejection_from_constant_hat.png
    unuran-1.8.1/doc/figures/rejection_from_constant_hat.txt
    unuran-1.8.1/doc/figures/rou-cauchy.eps
    unuran-1.8.1/doc/figures/rou-cauchy.pdf
    unuran-1.8.1/doc/figures/rou-cauchy.png
    unuran-1.8.1/doc/figures/rou-cauchy.txt
    unuran-1.8.1/doc/figures/texpict2img.pl
    unuran-1.8.1/doc/src/Makefile.am
    unuran-1.8.1/doc/src/Makefile.in
    unuran-1.8.1/doc/src/README
    unuran-1.8.1/doc/src/arvag.dh
    unuran-1.8.1/doc/src/error_debug.dh
    unuran-1.8.1/doc/src/examples.dh
    unuran-1.8.1/doc/src/glossary.dh
```

```
    unuran-1.8.1/doc/src/index.dh
    unuran-1.8.1/doc/src/installation.dh
    unuran-1.8.1/doc/src/intro.dh
    unuran-1.8.1/doc/src/make_texi.pl
    unuran-1.8.1/doc/src/methods.dh
    unuran-1.8.1/doc/src/methods_cemp.texi
    unuran-1.8.1/doc/src/methods_cont.texi
    unuran-1.8.1/doc/src/methods_cvec.texi
    unuran-1.8.1/doc/src/methods_cvemp.texi
    unuran-1.8.1/doc/src/methods_discr.texi
    unuran-1.8.1/doc/src/methods_matr.texi
    unuran-1.8.1/doc/src/methods_mcmc.texi
    unuran-1.8.1/doc/src/misc.dh
    unuran-1.8.1/doc/src/ref_example0.texi
    unuran-1.8.1/doc/src/ref_example0_str.texi
    unuran-1.8.1/doc/src/ref_example1.texi
    unuran-1.8.1/doc/src/ref_example1_str.texi
    unuran-1.8.1/doc/src/ref_example2.texi
    unuran-1.8.1/doc/src/ref_example2_str.texi
    unuran-1.8.1/doc/src/ref_example3.texi
    unuran-1.8.1/doc/src/ref_example3_str.texi
    unuran-1.8.1/doc/src/ref_example_FuncStr.texi
    unuran-1.8.1/doc/src/ref_example_anti.texi
    unuran-1.8.1/doc/src/ref_example_anti_str.texi
    unuran-1.8.1/doc/src/ref_example_cext.texi
    unuran-1.8.1/doc/src/ref_example_cont.texi
    unuran-1.8.1/doc/src/ref_example_cont_str.texi
    unuran-1.8.1/doc/src/ref_example_dext.texi
    unuran-1.8.1/doc/src/ref_example_discr.texi
    unuran-1.8.1/doc/src/ref_example_discr_str.texi
    unuran-1.8.1/doc/src/ref_example_emp.texi
    unuran-1.8.1/doc/src/ref_example_emp_str.texi
    unuran-1.8.1/doc/src/ref_example_gsl.texi
    unuran-1.8.1/doc/src/ref_example_mixt.texi
    unuran-1.8.1/doc/src/ref_example_mixt_inv.texi
    unuran-1.8.1/doc/src/ref_example_rngstreams.texi
    unuran-1.8.1/doc/src/ref_example_vemp.texi
    unuran-1.8.1/doc/src/ref_example_win32_1.texi
    unuran-1.8.1/doc/src/ref_example_win32_2.texi
    unuran-1.8.1/doc/src/references.dh
    unuran-1.8.1/doc/src/stddist.dh
    unuran-1.8.1/doc/src/texinfo.tex
    unuran-1.8.1/doc/src/top.dh
    unuran-1.8.1/doc/src/unuran_src.texi
    unuran-1.8.1/doc/stamp-1
    unuran-1.8.1/doc/stamp-vti
    unuran-1.8.1/doc/unuran.html
    unuran-1.8.1/doc/unuran.info
    unuran-1.8.1/doc/unuran.pdf
    unuran-1.8.1/doc/unuran.texi
    unuran-1.8.1/doc/unuran.txt
    unuran-1.8.1/doc/unuran_win32.html
    unuran-1.8.1/doc/unuran_win32.info
    unuran-1.8.1/doc/unuran_win32.pdf
    unuran-1.8.1/doc/unuran_win32.texi
    unuran-1.8.1/doc/unuran_win32_libname.texi
    unuran-1.8.1/doc/version.texi
    unuran-1.8.1/doc/version_win32.texi
    unuran-1.8.1/examples/Makefile.am
    unuran-1.8.1/examples/Makefile.in
    unuran-1.8.1/examples/example0.c
    unuran-1.8.1/examples/example0_str.c
    unuran-1.8.1/examples/example1.c
    unuran-1.8.1/examples/example1_str.c
    unuran-1.8.1/examples/example2.c
    unuran-1.8.1/examples/example2_str.c
    unuran-1.8.1/examples/example3.c
```

```
    unuran-1.8.1/examples/example3_str.c
    unuran-1.8.1/examples/example_FuncStr.c
    unuran-1.8.1/examples/example_anti.c
    unuran-1.8.1/examples/example_anti_str.c
    unuran-1.8.1/examples/example_cext.c
    unuran-1.8.1/examples/example_cont.c
    unuran-1.8.1/examples/example_cont_str.c
    unuran-1.8.1/examples/example_cpp.cpp
    unuran-1.8.1/examples/example_dext.c
    unuran-1.8.1/examples/example_discr.c
    unuran-1.8.1/examples/example_discr_str.c
    unuran-1.8.1/examples/example_emp.c
    unuran-1.8.1/examples/example_emp_str.c
    unuran-1.8.1/examples/example_errorhandler.c
    unuran-1.8.1/examples/example_gsl.c
    unuran-1.8.1/examples/example_mcorr.c
    unuran-1.8.1/examples/example_mixt.c
    unuran-1.8.1/examples/example_mixt_inv.c
    unuran-1.8.1/examples/example_prng.c
    unuran-1.8.1/examples/example_prng_str.c
    unuran-1.8.1/examples/example_rngstreams.c
    unuran-1.8.1/examples/example_vemp.c
    unuran-1.8.1/experiments/Makefile.am
    unuran-1.8.1/experiments/Makefile.in
    unuran-1.8.1/experiments/make_timing_table.c
    unuran-1.8.1/experiments/timings_chap_10.conf
    unuran-1.8.1/experiments/timings_chap_8.conf
    unuran-1.8.1/scripts/Makefile.am
    unuran-1.8.1/scripts/Makefile.in
    unuran-1.8.1/scripts/compute_machine_constants.c
    unuran-1.8.1/scripts/make_urng_header.pl
    unuran-1.8.1/scripts/merge_h.pl
    unuran-1.8.1/scripts/read_PDF.pl
    unuran-1.8.1/scripts/remove_comments.pl
    unuran-1.8.1/scripts/run_valgrind.sh
    unuran-1.8.1/scripts/win32/Makefile.win32
    unuran-1.8.1/scripts/win32/build.sh
    unuran-1.8.1/scripts/win32/example1.c
    unuran-1.8.1/scripts/win32/example2.c
    unuran-1.8.1/scripts/win32/make_dll_def.pl
    unuran-1.8.1/src/Makefile.am
    unuran-1.8.1/src/Makefile.in
    unuran-1.8.1/src/README
    unuran-1.8.1/src/distr/Makefile.am
    unuran-1.8.1/src/distr/Makefile.in
    unuran-1.8.1/src/distributions/Makefile.am
    unuran-1.8.1/src/distributions/Makefile.in
    unuran-1.8.1/src/distributions/README
    unuran-1.8.1/src/methods/Makefile.am
    unuran-1.8.1/src/methods/Makefile.in
    unuran-1.8.1/src/parser/Makefile.am
    unuran-1.8.1/src/parser/Makefile.in
    unuran-1.8.1/src/parser/functparser_doc.dh
    unuran-1.8.1/src/parser/make_stringparser.pl
    unuran-1.8.1/src/parser/stringparser_doc.dh
    unuran-1.8.1/src/specfunct/Makefile.am
    unuran-1.8.1/src/specfunct/Makefile.in
    unuran-1.8.1/src/tests/Makefile.am
    unuran-1.8.1/src/tests/Makefile.in
    unuran-1.8.1/src/uniform/Makefile.am
    unuran-1.8.1/src/uniform/Makefile.in
    unuran-1.8.1/src/uniform/fish.c
    unuran-1.8.1/src/uniform/mrg31k3p.c
    unuran-1.8.1/src/uniform/mstd.c
    unuran-1.8.1/src/uniform/unuran_urng_gsl.h
    unuran-1.8.1/src/uniform/unuran_urng_prng.h
    unuran-1.8.1/src/uniform/unuran_urng_rngstreams.h
```

```
    unuran-1.8.1/src/uniform/urng_builtin.c
    unuran-1.8.1/src/uniform/urng_builtin.h
    unuran-1.8.1/src/uniform/urng_fvoid.c
    unuran-1.8.1/src/uniform/urng_fvoid.h
    unuran-1.8.1/src/uniform/urng_gsl.c
    unuran-1.8.1/src/uniform/urng_gsl.h
    unuran-1.8.1/src/uniform/urng_gslqrng.c
    unuran-1.8.1/src/uniform/urng_gslqrng.h
    unuran-1.8.1/src/uniform/urng_prng.c
    unuran-1.8.1/src/uniform/urng_prng.h
    unuran-1.8.1/src/uniform/urng_randomshift.c
    unuran-1.8.1/src/uniform/urng_randomshift.h
    unuran-1.8.1/src/uniform/urng_rngstreams.c
    unuran-1.8.1/src/uniform/urng_rngstreams.h
    unuran-1.8.1/src/unuran.h.in
    unuran-1.8.1/src/urng/Makefile.am
    unuran-1.8.1/src/urng/Makefile.in
    unuran-1.8.1/src/utils/Makefile.am
    unuran-1.8.1/src/utils/Makefile.in
    unuran-1.8.1/tests/Makefile.am
    unuran-1.8.1/tests/Makefile.in
    unuran-1.8.1/tests/README.conf
    unuran-1.8.1/tests/make_test_files.pl
    unuran-1.8.1/tests/t_arou.c
    unuran-1.8.1/tests/t_arou.conf
    unuran-1.8.1/tests/t_ars.c
    unuran-1.8.1/tests/t_ars.conf
    unuran-1.8.1/tests/t_auto.c
    unuran-1.8.1/tests/t_auto.conf
    unuran-1.8.1/tests/t_cext.c
    unuran-1.8.1/tests/t_cext.conf
    unuran-1.8.1/tests/t_cstd.c
    unuran-1.8.1/tests/t_cstd.conf
    unuran-1.8.1/tests/t_dari.c
    unuran-1.8.1/tests/t_dari.conf
    unuran-1.8.1/tests/t_dau.c
    unuran-1.8.1/tests/t_dau.conf
    unuran-1.8.1/tests/t_deprecated_tdrgw.c
    unuran-1.8.1/tests/t_deprecated_vmt.c
    unuran-1.8.1/tests/t_deprecated_vmt.conf
    unuran-1.8.1/tests/t_dext.c
    unuran-1.8.1/tests/t_dext.conf
    unuran-1.8.1/tests/t_dgt.c
    unuran-1.8.1/tests/t_dgt.conf
    unuran-1.8.1/tests/t_distr.c
    unuran-1.8.1/tests/t_distr.conf
    unuran-1.8.1/tests/t_distr_cemp.c
    unuran-1.8.1/tests/t_distr_cemp.conf
    unuran-1.8.1/tests/t_distr_condi.c
    unuran-1.8.1/tests/t_distr_condi.conf
    unuran-1.8.1/tests/t_distr_cont.c
    unuran-1.8.1/tests/t_distr_cont.conf
    unuran-1.8.1/tests/t_distr_corder.c
    unuran-1.8.1/tests/t_distr_corder.conf
    unuran-1.8.1/tests/t_distr_cvec.c
    unuran-1.8.1/tests/t_distr_cvec.conf
    unuran-1.8.1/tests/t_distr_cvemp.c
    unuran-1.8.1/tests/t_distr_cvemp.conf
    unuran-1.8.1/tests/t_distr_cxtrans.c
    unuran-1.8.1/tests/t_distr_cxtrans.conf
    unuran-1.8.1/tests/t_distr_discr.c
    unuran-1.8.1/tests/t_distr_discr.conf
    unuran-1.8.1/tests/t_distr_matr.c
    unuran-1.8.1/tests/t_distr_matr.conf
    unuran-1.8.1/tests/t_dsrou.c
    unuran-1.8.1/tests/t_dsrou.conf
    unuran-1.8.1/tests/t_dss.c
```

```
    unuran-1.8.1/tests/t_dss.conf
    unuran-1.8.1/tests/t_dstd.c
    unuran-1.8.1/tests/t_dstd.conf
    unuran-1.8.1/tests/t_empk.c
    unuran-1.8.1/tests/t_empk.conf
    unuran-1.8.1/tests/t_empl.c
    unuran-1.8.1/tests/t_empl.conf
    unuran-1.8.1/tests/t_gibbs.c
    unuran-1.8.1/tests/t_gibbs.conf
    unuran-1.8.1/tests/t_hinv.c
    unuran-1.8.1/tests/t_hinv.conf
    unuran-1.8.1/tests/t_hist.c
    unuran-1.8.1/tests/t_hist.conf
    unuran-1.8.1/tests/t_hitro.c
    unuran-1.8.1/tests/t_hrb.c
    unuran-1.8.1/tests/t_hrb.conf
    unuran-1.8.1/tests/t_hrd.c
    unuran-1.8.1/tests/t_hrd.conf
    unuran-1.8.1/tests/t_hri.c
    unuran-1.8.1/tests/t_hri.conf
    unuran-1.8.1/tests/t_info.c
    unuran-1.8.1/tests/t_info.conf
    unuran-1.8.1/tests/t_itdr.c
    unuran-1.8.1/tests/t_itdr.conf
    unuran-1.8.1/tests/t_mcorr.c
    unuran-1.8.1/tests/t_mcorr.conf
    unuran-1.8.1/tests/t_mixt.c
    unuran-1.8.1/tests/t_mvstd.c
    unuran-1.8.1/tests/t_mvstd.conf
    unuran-1.8.1/tests/t_mvtdr.c
    unuran-1.8.1/tests/t_ninv.c
    unuran-1.8.1/tests/t_ninv.conf
    unuran-1.8.1/tests/t_norta.c
    unuran-1.8.1/tests/t_norta.conf
    unuran-1.8.1/tests/t_nrou.c
    unuran-1.8.1/tests/t_nrou.conf
    unuran-1.8.1/tests/t_pinv
    unuran-1.8.1/tests/t_pinv.c
    unuran-1.8.1/tests/t_srou.c
    unuran-1.8.1/tests/t_srou.conf
    unuran-1.8.1/tests/t_ssr.c
    unuran-1.8.1/tests/t_ssr.conf
    unuran-1.8.1/tests/t_stringparser.c
    unuran-1.8.1/tests/t_stringparser.conf
    unuran-1.8.1/tests/t_tabl.c
    unuran-1.8.1/tests/t_tabl.conf
    unuran-1.8.1/tests/t_tdr.c
    unuran-1.8.1/tests/t_tdr.conf
    unuran-1.8.1/tests/t_tdr_gw.c
    unuran-1.8.1/tests/t_tdr_gw.conf
    unuran-1.8.1/tests/t_tdr_ia.c
    unuran-1.8.1/tests/t_tdr_ia.conf
    unuran-1.8.1/tests/t_tdr_ps.c
    unuran-1.8.1/tests/t_tdr_ps.conf
    unuran-1.8.1/tests/t_unif.c
    unuran-1.8.1/tests/t_unif.conf
    unuran-1.8.1/tests/t_unur_error.c
    unuran-1.8.1/tests/t_unur_error.conf
    unuran-1.8.1/tests/t_unur_tests.c
    unuran-1.8.1/tests/t_unur_tests.conf
    unuran-1.8.1/tests/t_urng.c
    unuran-1.8.1/tests/t_urng.conf
    unuran-1.8.1/tests/t_utdr.c
    unuran-1.8.1/tests/t_utdr.conf
    unuran-1.8.1/tests/t_util_matrix.c
    unuran-1.8.1/tests/t_util_matrix.conf
    unuran-1.8.1/tests/t_vempk.c
```

```
    unuran-1.8.1/tests/t_vempk.conf
    unuran-1.8.1/tests/t_vnrou.c
    unuran-1.8.1/tests/t_vnrou.conf
    unuran-1.8.1/tests/t_x_gen.c
    unuran-1.8.1/tests/t_x_gen.conf
    unuran-1.8.1/tests/test_StdDistr.c
    unuran-1.8.1/tests/test_StdDistr.m
    unuran-1.8.1/tests/test_functionparser.c
    unuran-1.8.1/tests/test_functionparser.m
    unuran-1.8.1/tests/testcounter.c
    unuran-1.8.1/tests/testdistributions/Makefile.am
    unuran-1.8.1/tests/testdistributions/Makefile.in
    unuran-1.8.1/tests/testdistributions/c_sawtooth_contpdf.c
    unuran-1.8.1/tests/testdistributions/c_sawtooth_discpdf.c
    unuran-1.8.1/tests/testdistributions/c_w_pdf_from_logpdf.c
    unuran-1.8.1/tests/testdistributions/c_with_multiple_of_pdf.c
    unuran-1.8.1/tests/testdistributions/c_wo_logpdf.c
    unuran-1.8.1/tests/testdistributions/testdistributions.h
    unuran-1.8.1/tests/testdistributions/vc_cauchy_RoU_ball.c
    unuran-1.8.1/tests/testdistributions/vc_special_correlations_ar1.c
    unuran-1.8.1/tests/testdistributions/vc_special_correlations_constantrho.c
    unuran-1.8.1/tests/testdistributions/vc_w_marginals.c
    unuran-1.8.1/tests/testdistributions/vc_wo_logpdf.c
    unuran-1.8.1/tests/testroutines.c
    unuran-1.8.1/tests/testunuran.h
    unuran-1.8.1/src/distr/deprecated_distr.c
    unuran-1.8.1/src/distr/deprecated_distr.h
    unuran-1.8.1/src/methods/deprecated_methods.c
    unuran-1.8.1/src/methods/deprecated_methods.h
    unuran-1.8.1/src/methods/deprecated_tdrgw.h
    unuran-1.8.1/src/methods/deprecated_vmt.c
    unuran-1.8.1/src/methods/deprecated_vmt.h
    unuran-1.8.1/src/methods/deprecated_vmt_struct.h
    unuran-1.8.1/src/parser/stringparser_lists.ch.in
UNU.RAN relies on a modified version of the library Cephes,
see ./src/src/specfunct/cephes_source.h

NumPy
-----

Copyright (c) 2005-2022, NumPy Developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.

    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.

    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
```

```
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

scipy-mathjax
-------------

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

threadpoolctl
-------------
Copyright notice(s):

Copyright (c) 2019, threadpoolctl contributors


Copyright (c) 2017, Intel Corporation published under the BSD 3-Clause



License fulltext:
Copyright (c) 2019, threadpoolctl contributors
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    * Redistributions of source code must retain the above copyright notice,
      this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of copyright holder nor the names of its contributors
      may be used to endorse or promote products derived from this software
      without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

joblib

```
Copyright (c) 2008-2021, The joblib developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.

* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
```

```
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

==========
==========

LangChain

```
The MIT License

Copyright (c) Harrison Chase

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.

4th Party Dependencies
----------------------

aiohttp
-------
Copyright aio-libs contributors.

   Licensed under the Apache License, Version 2.0 (the "License");
   you may not use this file except in compliance with the License.
   You may obtain a copy of the License at

       http://www.apache.org/licenses/LICENSE-2.0

   Unless required by applicable law or agreed to in writing, software
   distributed under the License is distributed on an "AS IS" BASIS,
   WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
   See the License for the specific language governing permissions and
   limitations under the License.

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

aiosignal
---------
License: Apache-2.0
A copy of the Apache License v2.0, January 2004 license can be found
```

```
in the 'Standard Licenses' section


frozenlist
----------
License: Apache-2.0
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


async-timeout
-------------
License: Apache-2.0
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

aio-libs
--------
Copyright 2016-2020 aio-libs collaboration.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

   http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


attrs
-----
Copyright (c) 2015 Hynek Schlawack and the attrs contributors

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


charset-normalizer
------------------
Copyright (c) 2019 TAHRI Ahmed R.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
```

```
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


multidict
---------
   Copyright 2016-2021 Andrew Svetlov and aio-libs team

   Licensed under the Apache License, Version 2.0 (the "License");
   you may not use this file except in compliance with the License.
   You may obtain a copy of the License at

       http://www.apache.org/licenses/LICENSE-2.0

   Unless required by applicable law or agreed to in writing, software
   distributed under the License is distributed on an "AS IS" BASIS,
   WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
   See the License for the specific language governing permissions and
   limitations under the License.

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


yarl
----
License: Apache-2.0
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


idna
----
Copyright (c) 2013-2021, Kim Davies All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

    Redistributions of source code must retain the above copyright notice,
    this list of conditions and the following disclaimer.

    Redistributions in binary form must reproduce the above copyright notice,
    this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.

    Neither the name of the copyright holder nor the names of its contributors
    may be used to endorse or promote products derived from this software
    without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
```

```
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
THE POSSIBILITY OF SUCH DAMAGE.


anyio
-----
Copyright (c) 2018 Alex Grönholm

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.


exceptiongroup
--------------
Copyright (c) 2022 Alex Grönholm
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This project contains code copied from the Python standard library.
The following is the required license notice for those parts.
A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section

sniffio
-------
This software is made available under the terms of *either* of the
licenses found in LICENSE.APACHE2 or LICENSE.MIT. Contributions to are
made under the terms of *both* these licenses.

Apache License
            Version 2.0, January 2004
            http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

The MIT License (MIT)
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
```

```
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.


dataclasses-json
----------------
Copyright (c) 2019 Charles Li and contributors

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


marshmallow
-----------
Copyright 2021 Steven Loria and contributors

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.


packaging
---------
This software is made available under the terms of *either* of the licenses
```

```
found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made
under the terms of *both* these licenses.

Apache License
           Version 2.0, January 2004
           http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

Copyright (c) Donald Stufft and individual contributors.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.

    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


typing-inspect
--------------
Copyright (c) 2017-2019 Ivan Levkivskyi

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.


mypy-extensions
---------------
Mypy extensions are licensed under the terms of the MIT license, reproduced below.

The MIT License

Copyright (c) 2016-2017 Jukka Lehtosalo and contributors

Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
```

```
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.


typing-extensions
-----------------
License: PSF
A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section

ZERO-CLAUSE BSD LICENSE FOR CODE IN THE PYTHON DOCUMENTATION
----------------------------------------------------------------------
Permission to use, copy, modify, and/or distribute this software for any
purpose with or without fee is hereby granted.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH
REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT,
INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM
LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR
OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE.


jsonpatch
---------
Copyright (c) 2011 Stefan Kögl <stefan@skoegl.net>
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials provided
with the distribution.
3. Neither the name of the copyright holder nor the names of
its contributors may be used to endorse or promote products
derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

jsonpointer
```

```
-----------
Copyright (c) 2011 Stefan Kögl <stefan@skoegl.net>
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products
   derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


langsmith
---------
Copyright (c) 2023 LangChain

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


pydantic
--------
Copyright (c) 2017 to present Pydantic Services Inc. and individual contributors.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
```

```
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


annotated-types
---------------
Copyright (c) 2022 the contributors

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.



pydantic-core
-------------
Copyright (c) 2022 Samuel Colvin

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


numpy
-----
Copyright (c) 2005-2023, NumPy Developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.

    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
```

```
       disclaimer in the documentation and/or other materials provided
       with the distribution.

    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----
This binary distribution of NumPy also bundles the following software:

Name: OpenBLAS
Files: extra-dll\libopenb*.dll
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.

  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:

     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.

     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: extra-dll\libopenb*.dll
Description: bundled in OpenBLAS
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
```

```
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.

  $COPYRIGHT$

  Additional copyrights may follow

  $HEADER$

  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:

  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.

  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.

  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.

  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSES_bundled.txt
--------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: tempita
Files: tools/npy_tempita/*
License: MIT
  For details, see tools/npy_tempita/license.txt

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
```

```
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt

--------------- RECURSIVE LICENSE Mentioned in  LICENSES_bundled.txt --------------------
-------------------------------------------------------------------------------------------
lapack-lite
Copyright (c) 1992-2022 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2022 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2022 The University of Colorado Denver.  All rights
                        reserved.

Additional copyrights may follow

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.

- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-------------------------------------------------------------------------
tempita

Copyright (c) 2022 Ian Bicking and Contributors

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
```

```
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

--------------------------------------------------------------------------------
dragon4
  Copyright (c) 2022 Ryan Juckett

  Permission is hereby granted, free of charge, to any person obtaining a copy
  of this software and associated documentation files (the "Software"), to
  deal in the Software without restriction, including without limitation the
  rights to use, copy, modify, merge, publish, distribute, sublicense, andor
  sell copies of the Software, and to permit persons to whom the Software is
  furnished to do so, subject to the following conditions:

  The above copyright notice and this permission notice shall be included in
  all copies or substantial portions of the Software.

  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
  IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
  FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
  AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
  LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
  FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
  IN THE SOFTWARE.

--------------------------------------------------------------------------------
libdivide

zlib License
  Copyright (C) 2010 - 2022 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2022 Kim Walisch, <kim.walisch@gmail.com>

  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.

  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:

  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.

--------------------------------------------------------------------------------
LICENSES_bundled in different directories:
--------------------------------------------------------------------------------

The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: SPLITMIX64
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: Sebastiano Vigna © 2005–2019 NumPy Developers, Licensed
under the 3-clause BSD License.
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md

Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
```

```
License: MIT
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md

Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: D. E. Shaw Research
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md

Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md

Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md

Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: Jeff Bezanson, Stefan Karpinski, Viral B. Shah, and other contributors
For license text, see/numpy/blob/numpy/random/src/distributions/LICENSE.md

Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA Open
Source License (NCSA) and The 3-Clause BSD License
For license text, see/numpy/blob/numpy/random/LICENSE.md

Name: nympy.core.ma
Files: /numpy/blob/numpy/ma/*
License: University of Georgia and Pierre G.F. Gerard-Marchant
For license text, see /numpy/blob/numpy/ma/LICENSE

--------------- RECURSIVE LICENSE Mentioned in  LICENSES_bundled in
different directories (list above) --------------------
Name: SPLITMIX64
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all copyright
and related and neighboring rights to this software to the public
domain worldwide. This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.

Name: SFC64
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files
(the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.
```

```
Name: PHILOX
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
   - Redistributions of source code must retain the above
   copyright notice, this list of conditions, and the following
   disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions, and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - Neither the name of D. E. Shaw Research nor the names
    of its contributors may be used to endorse or promote
    products derived from this software without specific
    prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.

Name: PCG64
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT
OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: MT19937
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the original
design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
   -  Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
   -  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
    - The names of its contributors may not be used to endorse or
```

```
    promote products derived from this software without specific
    prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

Original algorithm for the implementation of rk_interval function
from Richard J. Wagner's implementation of the Mersenne Twister RNG,
optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files
(the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.

Name: Random
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal with the Software without
```

```
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimers.
Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimers in the documentation and/or other materials
provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of any
contributors may be used to endorse or promote products
derived from this Software without specific prior written permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE
AND NONINFRINGEMENT. IN NO EVENT SHALL THE CONTRIBUTORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE
USE OR OTHER DEALINGS WITH THE SOFTWARE.

Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
    - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
    - Redistributions in binary form must reproduce the above
    copyright notice, this list of conditions and the following
    disclaimer in the documentation and/or other materials provided
    with the distribution.
   - Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING
IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original sources,
often the algorithm's designer. Component licenses are located with
the component code.


nympy.core.ma
-------------
Copyright (c) 2006, University of Georgia and Pierre G.F.
Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the
following conditions are met:

     * Redistributions of source code must retain the above
     copyright
       notice, this list of conditions and the following
       disclaimer.
```

```
     * Redistributions in binary form must reproduce the
     above copyright
       notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials
       provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or
        promote products derived from this software without
        specific prior written permission.

 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

importlib_metadata
------------------
License: Apache-2.0
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


pyyaml
------
Copyright (c) 2017-2021 Ingy döt Net
Copyright (c) 2006-2016 Kirill Simonov

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


requests
--------
License: Apache-2.0
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


python-certifi
--------------
This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
```

```
file (certdata.txt).  This file can be found in the mozilla source tree:
https://hg.mozilla.org/mozilla-central/file/tip/security/nss/lib/ckfw/builtins/certdata.txt
It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php_curl, or with
an Apache+mod_ssl webserver for SSL client authentication.
Just configure this file as the SSLCACertificateFile.#

***** BEGIN LICENSE BLOCK *****
This Source Code Form is subject to the terms of the Mozilla Public License,
v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain
one at http://mozilla.org/MPL/2.0/.

***** END LICENSE BLOCK *****
A copy of the Mozilla Public License 2.0  license can be found
in the 'Standard Licenses' section


charset_normalizer
------------------
Copyright (c) 2019 TAHRI Ahmed R.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


idna
-----
Copyright (c) 2013-2021, Kim Davies All rights reserved.
Redistribution and use in source and binary forms, with or without modification, are
permitted provided that the following conditions are met:
    Redistributions of source code must retain the above copyright notice, this
    list of conditions and the following disclaimer.
    Redistributions in binary form must reproduce the above copyright notice,
    this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
    Neither the name of the copyright holder nor the names of its contributors
    may be used to endorse or promote products derived from this software
    without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


urllib3
-------
```

```
Copyright (c) 2008-2020 Andrey Petrov and contributors.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


sqlalchemy
----------
Copyright 2005-2023 SQLAlchemy authors and contributors <see AUTHORS file>.

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


greenlet
--------
The following files are derived from Stackless Python and are subject to the
same license as Stackless Python:
 src/greenlet/slp_platformselect.h
 files in src/greenlet/platform/ directory
See LICENSE.PSF and http://www.stackless.com/ for details.

Unless otherwise noted, the files in greenlet have been released under the
following MIT license:
Copyright (c) Armin Rigo, Christian Tismer and contributors

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
```

```
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.


tenacity
--------
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
```

```
================================================================================
================================================================================
```

LangChain-Community (Python)

```
    Copyright (c) LangChain, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

------------------------- Fourth Party Dependencies --------------------------
- Apache-2.0
- BSD-3-Clause
- MIT
- MPL-2.0
- PSF-2.0

--------------------------------- (separator) ---------------------------------
== #1)
package_name: aiohttp
license_type: Apache-2.0

Copyright aio-libs contributors.

_______________________________________________________________________________
== #2)
package_name: dataclasses-json
license_type: MIT

Copyright (c) 2019 Charles Li and contributors

_______________________________________________________________________________
== #3)
```

```
package_name: httpx-sse
license_type: MIT

Copyright (c) 2022 Florimond Manca

_____________________________________________________________________________________
== #4)
package_name: langchain
license_type: MIT

Copyright (c) LangChain, Inc.

_____________________________________________________________________________________
== #5)
package_name: langchain-core
license_type: MIT

Copyright (c) Harrison Chase

_____________________________________________________________________________________
== #6)
package_name: langsmith
license_type: MIT License

Copyright (c) 2023 LangChain

_____________________________________________________________________________________
== #7)
package_name: numpy
license_type: BSD-3-Clause

 ./.spin/LICENSE

BSD 3-Clause License

Copyright (c) 2021--2025, Scientific Python project
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.

3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived from
   this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-------------- Separator --------------

 ./LICENSE.txt
```

```
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.

    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.

    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-------------- Separator --------------

 ./LICENSES_bundled.txt

The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: dragon4
Files: numpy/_core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/_core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/_core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/_core/include/numpy/libdivide/LICENSE.txt


Note that the following files are vendored in the repository and sdist but not
installed in built numpy packages:

Name: Meson
Files: vendored-meson/meson/*
License: Apache 2.0
  For license text, see vendored-meson/meson/COPYING

Name: spin
Files: .spin/cmds.py
License: BSD-3
  For license text, see .spin/LICENSE
```

```
-------------- Separator --------------

 ./numpy/_core/include/numpy/libdivide/LICENSE.txt

  zlib License
  ------------

  Copyright (C) 2010 - 2019 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2019 Kim Walisch, <kim.walisch@gmail.com>

  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.

  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:

  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.

-------------- Separator --------------

 ./numpy/core/src/multiarray/dragon4.c

/*
 * Copyright (c) 2014 Ryan Juckett
 *
 * Permission is hereby granted, free of charge, to any person obtaining a copy
 * of this software and associated documentation files (the "Software"), to
 * deal in the Software without restriction, including without limitation the
 * rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
 * sell copies of the Software, and to permit persons to whom the Software is
 * furnished to do so, subject to the following conditions:
 *
 * The above copyright notice and this permission notice shall be included in
 * all copies or substantial portions of the Software.
 *
 * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
 * IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
 * FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
 * AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
 * LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
 * FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
 * IN THE SOFTWARE.
 */
-------------- Separator --------------

 ./numpy/linalg/lapack_lite/LICENSE.txt

Copyright (c) 1992-2013 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                        reserved.

$COPYRIGHT$

Additional copyrights may follow
```

```
$HEADER$

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.

- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-------------- Separator --------------

 ./numpy/ma/LICENSE

* Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
* All rights reserved.
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions are met:
*
*     * Redistributions of source code must retain the above copyright
*       notice, this list of conditions and the following disclaimer.
*     * Redistributions in binary form must reproduce the above copyright
*       notice, this list of conditions and the following disclaimer in the
*       documentation and/or other materials provided with the distribution.
*     * Neither the name of the University of Georgia nor the
*       names of its contributors may be used to endorse or promote products
*       derived from this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
* EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
* WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
* DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
* DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
* (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
* ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
* SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-------------- Separator --------------
```

```
 ./numpy/random/LICENSE.md

**This software is dual-licensed under the The University of Illinois/NCSA
Open Source License (NCSA) and The 3-Clause BSD License**

# NCSA Open Source License
**Copyright (c) 2019 Kevin Sheppard. All rights reserved.**

Developed by: Kevin Sheppard (<kevin.sheppard@economics.ox.ac.uk>,
<kevin.k.sheppard@gmail.com>)
[http://www.kevinsheppard.com](http://www.kevinsheppard.com)


Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal with
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:

Redistributions of source code must retain the above copyright notice, this
list of conditions and the following disclaimers.

Redistributions in binary form must reproduce the above copyright notice, this
list of conditions and the following disclaimers in the documentation and/or
other materials provided with the distribution.

Neither the names of Kevin Sheppard, nor the names of any contributors may be
used to endorse or promote products derived from this Software without specific
prior written permission.

**THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH
THE SOFTWARE.**


# 3-Clause BSD License
**Copyright (c) 2019 Kevin Sheppard. All rights reserved.**

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.

3. Neither the name of the copyright holder nor the names of its contributors
   may be used to endorse or promote products derived from this software
   without specific prior written permission.

**THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
```

```
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
THE POSSIBILITY OF SUCH DAMAGE.**

# Components

Many parts of this module have been derived from original sources,
often the algorithm's designer. Component licenses are located with
the component code.

-------------- Separator --------------

 ./numpy/random/src/distributions/LICENSE.md

## NumPy

Copyright (c) 2005-2017, NumPy Developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

* Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.

* Neither the name of the NumPy Developers nor the names of any
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


## Julia

The ziggurat methods were derived from Julia.

Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski, Viral B. Shah,
and other contributors:

https://github.com/JuliaLang/julia/contributors


Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
```

```
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-------------- Separator --------------

 ./numpy/random/src/mt19937/LICENSE.md

# MT19937

Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)

The rk_random and rk_seed functions algorithms and the original design of
the Mersenne Twister RNG:

  Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
  All rights reserved.

  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions
  are met:

  1. Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

  2. Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in the
  documentation and/or other materials provided with the distribution.

  3. The names of its contributors may not be used to endorse or promote
  products derived from this software without specific prior written
  permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT OWNER
OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Original algorithm for the implementation of rk_interval function from
Richard J. Wagner's implementation of the Mersenne Twister RNG, optimised by
Magnus Jonsson.

Constants used in the rk_double implementation by Isaku Wada.

Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
```

```
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-------------- Separator --------------

 ./numpy/random/src/pcg64/LICENSE.md

# PCG64

## The MIT License

PCG Random Number Generation for C.

Copyright 2014 Melissa O'Neill <oneill@pcg-random.org>

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following
conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-------------- Separator --------------

 ./numpy/random/src/philox/LICENSE.md

# PHILOX

Copyright 2010-2012, D. E. Shaw Research.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

* Redistributions of source code must retain the above copyright
  notice, this list of conditions, and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions, and the following disclaimer in the
  documentation and/or other materials provided with the distribution.

* Neither the name of D. E. Shaw Research nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
```

```
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-------------- Separator --------------

 ./numpy/random/src/sfc64/LICENSE.md

# SFC64

## The MIT License

Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.

https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083


Copyright (c) 2018 Melissa E. O'Neill

Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

-------------- Separator --------------

 ./numpy/random/src/splitmix64/LICENSE.md

# SPLITMIX64

Written in 2015 by Sebastiano Vigna (vigna@acm.org)

To the extent possible under law, the author has dedicated all copyright
and related and neighboring rights to this software to the public domain
worldwide. This software is distributed without any warranty.

See <http://creativecommons.org/publicdomain/zero/1.0/>
.

-------------- Separator --------------

 .https://files.pythonhosted.org/packages/45/b2/
 6c7545bb7a38754d63048c7696804a0d947328125d81bf12beaa692c3ae3/
 numpy-1.19.5-cp36-cp36m-manylinux1_x86_64.whl


This binary distribution of NumPy also bundles the following software:


Name: OpenBLAS
Files: .libs/libopenb*.so
```

```
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/

License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.

  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:

     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.

     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

_______________________________________________________________________________

  == #8)
package_name: pydantic-settings
license_type: MIT License

Copyright (c) 2022 Samuel Colvin and other contributors

_______________________________________________________________________________

== #9)
package_name: PyYAML
license_type: MIT License

Copyright (c) 2017-2021 Ingy döt Net
Copyright (c) 2006-2016 Kirill Simonov

_______________________________________________________________________________

== #10)
package_name: requests
license_type: Apache Software License

Kenneth Reitz Python Software Foundation


                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/


   TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
```

```
_____________________________________________________________________________________
== #11)
package_name: SQLAlchemy
license_type: MIT License

Copyright 2005-2025 SQLAlchemy authors and contributors <see AUTHORS file>.

_____________________________________________________________________________________
== #12)
package_name: tenacity
license_type: Apache Software License
https://github.com/jd/tenacity?tab=readme-ov-file


***** BEGIN LICENSE BLOCK *****
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/


   TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

_____________________________________________________________________________________
== #13)
package_name: aiohappyeyeballs
license_type: PSF-2.0

_____________________________________________________________________________________
== #14)
package_name: aiosignal
license_type: Apache-2.0

Copyright 2013-2019 Nikolay Kim and Andrew Svetlov

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

_____________________________________________________________________________________
== #15)
package_name: annotated-types
license_type: MIT License

Copyright (c) 2022 the contributors

_____________________________________________________________________________________
== #16)
package_name: anyio
license_type: MIT License

Copyright (c) 2018 Alex Grönholm

_____________________________________________________________________________________
== #17)
package_name: async-timeout
license_type: Apache-2.0

Copyright 2016-2020 aio-libs collaboration.

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

_____________________________________________________________________________________
== #18)
package_name: attrs
```

```
license_type: MIT

Copyright (c) 2015 Hynek Schlawack and the attrs contributors

_____________________________________________________________________________________
== #19)
package_name: certifi
license_type: Mozilla Public License 2.0 (MPL 2.0)

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt).  This file can be found in the mozilla source tree:
https://hg.mozilla.org/mozilla-central/file/tip/security/nss/lib/ckfw/builtins/certdata.txt

It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php_curl, or with
an Apache+mod_ssl webserver for SSL client authentication.
Just configure this file as the SSLCACertificateFile.#

***** BEGIN LICENSE BLOCK *****
This Source Code Form is subject to the terms of the Mozilla Public License,
v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain
one at http://mozilla.org/MPL/2.0/.


***** END LICENSE BLOCK *****
@(#) $RCSfile: certdata.txt,v $ $Revision: 1.80 $ $Date: 2011/11/03 15:11:58 $

A copy of the Mozilla Public License 2.0  license can be found
in the 'Standard Licenses' section

_____________________________________________________________________________________
== #20)
package_name: charset-normalizer
license_type: MIT License

Copyright (c) 2025 TAHRI Ahmed R.

_____________________________________________________________________________________
== #21)
package_name: exceptiongroup
license_type: MIT

Copyright (c) 2022 Alex Grönholm

_____________________________________________________________________________________
== #22)
package_name: frozenlist
license_type: Apache-2.0

Copyright 2013-2019 Nikolay Kim and Andrew Svetlov

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

_____________________________________________________________________________________
== #23)
package_name: greenlet
license_type: MIT and PSF-2.0

The following files are derived from Stackless Python and are subject to the
same license as Stackless Python:
```

```
 src/greenlet/slp_platformselect.h
 files in src/greenlet/platform/ directory

See LICENSE.PSF and http://www.stackless.com/
for details.

A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section

Unless otherwise noted, the files in greenlet have been released under the
following MIT license:

Copyright (c) Armin Rigo, Christian Tismer and contributors

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.

________________________________________________________________________________
== #24)
package_name: h11
license_type: MIT License

Copyright (c) 2016 Nathaniel J. Smith <njs@pobox.com> and other contributors

________________________________________________________________________________
== #25)
package_name: httpcore
license_type: BSD License

Copyright © 2020, [Encode OSS Ltd](https://www.encode.io/).


________________________________________________________________________________
== #26)
package_name: httpx
license_type: BSD License

Copyright © 2019, [Encode OSS Ltd](https://www.encode.io/).


________________________________________________________________________________
== #27)
package_name: idna
license_type: BSD License

Copyright (c) 2013-2024, Kim Davies and contributors.

________________________________________________________________________________
== #28)
package_name: jsonpatch
license_type: BSD License
```

```
Copyright (c) 2011 Stefan Kögl <stefan@skoegl.net>

_____________________________________________________________________________________

== #29)
package_name: jsonpointer
license_type: BSD License

Copyright (c) 2011 Stefan Kögl <stefan@skoegl.net>

_____________________________________________________________________________________

== #30)
package_name: langchain-text-splitters
license_type: MIT

Copyright (c) LangChain, Inc.

_____________________________________________________________________________________

== #31)
package_name: marshmallow
license_type: MIT

./LICENSE
The MIT License

Copyright Steven Loria and contributors

./NOTICE
marshmallow includes code adapted from Django.

Django License
==============

Copyright (c) Django Software Foundation and individual contributors.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.

    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.

    3. Neither the name of Django nor the names of its contributors may be used
       to endorse or promote products derived from this software without
       specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

_____________________________________________________________________________________

== #32)
package_name: multidict
license_type: Apache-2.0

Copyright 2016 Andrew Svetlov and aio-libs contributors
```

```
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

_____________________________________________________________________________________

== #33)
package_name: mypy-extensions
license_type: MIT

Copyright (c) 2016-2017 Jukka Lehtosalo and contributors

_____________________________________________________________________________________

== #34)
package_name: orjson
license_type: Apache Software License; MIT License

orjson was written by ijl <ijl@mailbox.org>, copyright 2018 - 2025,
available to you under either the Apache 2 license or MIT license at your choice.

                              Apache License
                        Version 2.0, January 2004
                     http://www.apache.org/licenses/


TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

_____________________________________________________________________________________

== #35)
package_name: packaging
license_type: Apache Software License; BSD License

This software is made available under the terms of *either* of the licenses
found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made
under the terms of *both* these licenses.


                              Apache License
                        Version 2.0, January 2004
                     http://www.apache.org/licenses/


A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

Copyright (c) Donald Stufft and individual contributors.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.

    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
```

```
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

________________________________________________________________________________
== #36)
package_name: propcache
license_type: Apache-2.0

Copyright 2016-2021, Andrew Svetlov and aio-libs team

________________________________________________________________________________
== #37)
package_name: pydantic
license_type: MIT License

Copyright (c) 2017 to present Pydantic Services Inc. and individual contributors.

________________________________________________________________________________
== #38)
package_name: pydantic_core
license_type: MIT License

Copyright (c) 2022 Samuel Colvin

________________________________________________________________________________
== #39)
package_name: python-dotenv
license_type: BSD-3-Clause

Copyright (c) 2014, Saurabh Kumar (python-dotenv), 2013, Ted Tieken (django-dotenv-rw),
2013, Jacob Kaplan-Moss (django-dotenv)

________________________________________________________________________________
== #40)
package_name: requests-toolbelt
license_type: Apache Software License

Copyright 2014 Ian Cordasco, Cory Benfield

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

________________________________________________________________________________
== #41)
package_name: sniffio
license_type: Apache Software License; MIT License

This software is made available under the terms of *either* of the
licenses found in LICENSE.APACHE2 or LICENSE.MIT. Contributions to are
made under the terms of *both* these licenses.


                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/


   TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

________________________________________________________________________________
== #42)
package_name: typing_extensions
license_type: Python Software Foundation License
```

```
Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam,
The Netherlands.  All rights reserved.

A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section

_____________________________________________________________________________
== #43)
package_name: typing-inspect
license_type: MIT

Copyright (c) 2017-2019 Ivan Levkivskyi

_____________________________________________________________________________
== #44)
package_name: typing-inspection
license_type: MIT

Copyright (c) Pydantic Services Inc. 2025 to present

_____________________________________________________________________________
== #45)
package_name: urllib3
license_type: MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors.

_____________________________________________________________________________
== #46)
package_name: yarl
license_type: Apache-2.0

Copyright 2016-2021, Andrew Svetlov and aio-libs team

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

_____________________________________________________________________________
==#47)
package_name: zstandard
license_type: BSD License

Copyright (c) 2016, Gregory Szorc

---------------------------------- Licenses ----------------------------------

---------------------------------- (separator) ----------------------------------
== SPDX: Apache-2.0

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/


   TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

---------------------------------- (separator) ----------------------------------
== SPDX: BSD-3-Clause

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
```

```
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.

* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--------------------------------- (separator) ----------------------------------
== SPDX: MIT

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

--------------------------------- (separator) ----------------------------------
== https://www.mozilla.org/en-US/MPL/2.0/


Mozilla Public License
Version 2.0

A copy of the Mozilla Public License 2.0  license can be found
in the 'Standard Licenses' section

--------------------------------- (separator) ----------------------------------
== Python Software Foundation License

A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section

--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
```

==========
==========

lightgbm

```
Copyright (c) Microsoft Corporation
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

4th Party Depenenecies
----------------------

numpy
-----
Copyright (c) 1992-2013 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                        reserved.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura, All rights reserved.
Copyright (c) 2005-2017, NumPy Developers. All rights reserved.
Copyright 2010-2012, D. E. Shaw Research.
All rights reserved.
Copyright (c) 2008 Ian Bicking and Contributors
Copyright (c) 2018 Melissa E. O'Neill
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
Copyright (C) 2010 The Android Open Source Project
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
----
This binary distribution of NumPy also bundles the following software:
Name: OpenBLAS
Files: numpy.libs/libscipy_openblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: numpy.libs/libscipy_openblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
```

```
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: libquadmath
Files: numpy.libs/libquadmath*.so
Description: dynamically linked to files compiled with gcc
Availability: https://gcc.gnu.org/git/?p=gcc.git;a=tree;f=libquadmath
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Copyright (c) 1992-2013 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                        reserved.
$COPYRIGHT$
Additional copyrights may follow
$HEADER$
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
```

```
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: tempita
Copyright (c) 2008 Ian Bicking and Contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: dragon4
Copyright (c) 2014 Ryan Juckett
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.

Name: libdivide
Copyright (C) 2010 - 2019 ridiculous_fish, <libdivide@ridiculousfish.com>
Copyright (C) 2016 - 2019 Kim Walisch, <kim.walisch@gmail.com>
This software is provided 'as-is', without any express or implied
warranty.  In no event will the authors be held liable for any damages
arising from the use of this software.
Permission is granted to anyone to use this software for any purpose,
including commercial applications, and to alter it and redistribute it
freely, subject to the following restrictions:
1. The origin of this software must not be misrepresented; you must not
    claim that you wrote the original software. If you use this software
    in a product, an acknowledgment in the product documentation would be
    appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be
    misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: SPLITMIX64
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all copyright and
```

```
related and neighboring rights to this software to the public domain worldwide.
This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.

Name: SFC64
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE
OR OTHER DEALINGS IN THE SOFTWARE.

Name: PHILOX
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
   - Redistributions of source code must retain the above copyright notice,
   this list of conditions, and the following disclaimer.
   -  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions, and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
    - Neither the name of D. E. Shaw Research nor the names of its
    contributors may be used to endorse or promote products derived
    from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
THE POSSIBILITY OF SUCH DAMAGE.

Name: PCG64
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE
```

```
OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: MT19937
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the original design of
the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
   -  Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
   -  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
    - The names of its contributors may not be used to endorse or
    promote products derived from this software without specific
    prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval function
from Richard J. Wagner's implementation of the Mersenne Twister RNG,
optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
```

```
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Random
License: dual-licensed under the The University of Illinois/NCSA
Open Source License (NCSA) and The 3-Clause BSD License
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal with the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimers.
Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimers in the documentation and/or other materials provided
with the distribution.
Neither the names of Kevin Sheppard, nor the names of any
contributors may be used to endorse or promote products
derived from this Software without specific prior written permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE CONTRIBUTORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE
USE OR OTHER DEALINGS WITH THE SOFTWARE.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the
following conditions are met:
    - Redistributions of source code must retain the above
    copyright notice, this list of conditions and the following disclaimer.
    - Redistributions in binary form must reproduce the above
    copyright notice, this list of conditions and the
    following disclaimer in the documentation and/or other
    materials provided with the distribution.
   - Neither the name of the copyright holder nor the names of
   its contributors may be used to endorse or promote products
   derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original sources, often the
algorithm's designer. Component licenses are located with the component code.

nympy.core.ma
-------------
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
```

```
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:

     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.

 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


svml
----
Copyright (c) 2005-2021, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


scipy
-----
Copyright (c) 2001-2002 Enthought, Inc. 2003-2022, SciPy Developers.
All rights reserved.

Jamfile.v2:# Copyright Daryle Walker, Hubert Holin, John Maddock 2006 - 2007
acosh_data.ipp:// Copyright John Maddock 2008.
acosh_test.hpp://  (C) Copyright Hubert Holin 2003.
almost_equal.ipp:// Copyright (c) 2006 Johan Rade
asinh_data.ipp:// Copyright John Maddock 2008.
asinh_test.hpp://  (C) Copyright Hubert Holin 2003.
assoc_legendre_p.ipp://  (C) Copyright John Maddock 2006-7.
atanh_data.ipp:// Copyright John Maddock 2008.
```

```
atanh_test.hpp://  (C) Copyright Hubert Holin 2003.
bessel_i_data.ipp://  Copyright (c) 2007 John Maddock
bessel_i_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_large_data.ipp://  Copyright (c) 2007 John Maddock
bessel_k_data.ipp://  Copyright (c) 2007 John Maddock
bessel_k_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_y01_data.ipp://  Copyright (c) 2007 John Maddock
bessel_yn_data.ipp://  Copyright (c) 2007 John Maddock
bessel_yv_data.ipp://  Copyright (c) 2007 John Maddock
beta_exp_data.ipp://  (C) Copyright John Maddock 2006.
beta_med_data.ipp://  (C) Copyright John Maddock 2006.
beta_small_data.ipp://  (C) Copyright John Maddock 2006.
binomial_data.ipp://  (C) Copyright John Maddock 2006-7.
binomial_large_data.ipp://  (C) Copyright John Maddock 2006-7.
binomial_quantile.ipp://  (C) Copyright John Maddock 2006-7.
cbrt_data.ipp://  (C) Copyright John Maddock 2006-7.
common_factor_test.cpp://  (C) Copyright Daryle Walker 2001, 2006.
compile_test/tools_rational_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_real_cast_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_remez_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_chi_squared_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_complement_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sign_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_digamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_trunc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/constants_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/sf_sinc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_binomial_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_binomial_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_test_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_normal_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sinhc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sin_pi_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sph_harm_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_poisson_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/test_traits.cpp://  Copyright John Maddock 2007.
compile_test/dist_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_cos_pi_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_logistic_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_fpclassify_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_atanh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_precision_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hankel_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/sf_cbrt_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_beta_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_legendre_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_stats_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_polynomial_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_config_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_exponential_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_students_t_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_inv_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_acosh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_beta_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_fisher_f_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_triangular_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/instantiate.hpp://  Copyright John Maddock 2006.
compile_test/instantiate.hpp://  Copyright Paul A. Bristow 2007, 2010.
compile_test/tools_solve_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_next_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/distribution_concept_check.cpp://  Copyright John Maddock 2006.
```

```
compile_test/sf_laguerre_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tr1_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_ellint_rj_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_chi_squ_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_skew_norm_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_modf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_find_location_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_acos_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rd_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_roots_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_test_data_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_abs_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_t_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_factorials_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_atan_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_powm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hypot_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_pareto_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_round_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_weibull_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/std_real_concept_check.cpp://  Copyright John Maddock 2006.
compile_test/dist_hypergeo_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_inv_chi_sq_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sqrt1pm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_log1p_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_jacobi_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/dist_neg_binom_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_f_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_find_scale_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_bessel_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_minima_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_asin_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_extreme_val_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_lanczos_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_uniform_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/test_compile_result.hpp://  Copyright John Maddock 2007.
compile_test/tools_series_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_3_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_2_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hermite_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/poison.hpp://  Copyright John Maddock 2013.
compile_test/sf_zeta_incl_test.cpp://  Copyright John Maddock 2007.
compile_test/dist_laplace_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_expint_incl_test.cpp://  Copyright John Maddock 2007.
compile_test/sf_expm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_bernoulli_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_asinh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_beta_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_fraction_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_owens_t_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/tools_toms748_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_erf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/main.cpp://  Copyright John Maddock 2009.
compile_test/sf_math_fwd_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_airy_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/dist_lognormal_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_cauchy_incl_test.cpp://  Copyright John Maddock 2006.
complex_test.cpp://  (C) Copyright John Maddock 2005.
digamma_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_neg_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_root_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_small_data.ipp://  (C) Copyright John Maddock 2006-7.
e_float_concept_check.cpp://  Copyright John Maddock 2011.
ellint_e2_data.ipp://  Copyright (c) 2006 John Maddock
```

```
ellint_e_data.ipp://  Copyright (c) 2006 John Maddock
ellint_f_data.ipp://  Copyright (c) 2006 John Maddock
ellint_k_data.ipp://  (C) Copyright John Maddock 2006-7.
ellint_pi2_data.ipp://  Copyright (c) 2006 John Maddock
ellint_pi3_data.ipp://  Copyright (c) 2006 John Maddock
ellint_pi3_large_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rc_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rd_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rf_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rj_data.ipp://  Copyright (c) 2006 John Maddock
erf_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_large_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_small_data.ipp://  (C) Copyright John Maddock 2006.
erfc_inv_big_data.ipp://  (C) Copyright John Maddock 2006-7.
erfc_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
expint_1_data.ipp://  Copyright John Maddock 2008.
expint_data.ipp://  Copyright John Maddock 2008.
expint_small_data.ipp://  Copyright John Maddock 2008.
expinti_data.ipp://  Copyright John Maddock 2008.
expinti_data_double.ipp://  Copyright John Maddock 2008.
expinti_data_long.ipp://  Copyright John Maddock 2008.
functor.hpp://  (C) Copyright John Maddock 2007.
gamma_inv_big_data.ipp://  (C) Copyright John Maddock 2006-7.
gamma_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
gamma_inv_small_data.ipp://  (C) Copyright John Maddock 2006-7.
handle_test_result.hpp://  (C) Copyright John Maddock 2006-7.
hermite.ipp://  (C) Copyright John Maddock 2006-7.
hypergeometric_dist_data2.ipp:// Copyright John Maddock 2008
hypergeometric_test_data.ipp:// Copyright Gautam Sewani 2008
hypot_test.cpp://  (C) Copyright John Maddock 2005.
ibeta_data.ipp://  (C) Copyright John Maddock 2006.
ibeta_int_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_inva_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_large_data.ipp://  (C) Copyright John Maddock 2006.
ibeta_small_data.ipp://  (C) Copyright John Maddock 2006.
igamma_big_data.ipp://  (C) Copyright John Maddock 2006.
igamma_int_data.ipp://  (C) Copyright John Maddock 2006-7.
igamma_inva_data.ipp://  (C) Copyright John Maddock 2006-7.
igamma_med_data.ipp://  (C) Copyright John Maddock 2006.
igamma_small_data.ipp://  (C) Copyright John Maddock 2006.
jacobi_elliptic.ipp:// Copyright John Maddock 2012.
jacobi_elliptic_small.ipp:// Copyright John Maddock 2012.
jacobi_large_phi.ipp:// Copyright John Maddock 2012.
jacobi_near_1.ipp:// Copyright John Maddock 2012.
laguerre2.ipp://  (C) Copyright John Maddock 2006-7.
laguerre3.ipp://  (C) Copyright John Maddock 2006-7.
legendre_p.ipp://  (C) Copyright John Maddock 2006-7.
legendre_p_large.ipp://  (C) Copyright John Maddock 2006-7.
log1p_expm1_data.ipp://  (C) Copyright John Maddock 2006-7.
log1p_expm1_test.cpp://  Copyright John Maddock 2005.
log1p_expm1_test.cpp://  Copyright Paul A. Bristow 2010
log1p_expm1_test.hpp://  Copyright John Maddock 2005.
log1p_expm1_test.hpp://  Copyright Paul A. Bristow 2010
mpfr_concept_check.cpp://  Copyright John Maddock 2007-8.
mpreal_concept_check.cpp://  Copyright John Maddock 2007-8.
multiprc_concept_check_1.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_2.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_3.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_4.cpp://  Copyright John Maddock 2013.
ncbeta.ipp://  Copyright John Maddock 2008.
ncbeta_big.ipp://  Copyright John Maddock 2008.
nccs.ipp://  Copyright John Maddock 2008.
nccs_big.ipp:// Copyright John Maddock 2008.
nct.ipp:// Copyright John Maddock 2008.
nct_asym.ipp:// Copyright John Maddock 2012.
```

```
nct_small_delta.ipp:// Copyright John Maddock 2012.
negative_binomial_quantile.ipp://  (C) Copyright John Maddock 2006-7.
ntl_concept_check.cpp://  Copyright John Maddock 2007-8.
ntl_concept_check.cpp://  Copyright Paul A. Bristow 2009, 2011
owens_t.ipp://  Copyright John Maddock 2012.
owens_t_T7.hpp:// Copyright (C) Benjamin Sobotta 2012
owens_t_large_data.ipp://  Copyright John Maddock 2012.
pch.hpp://  Copyright John Maddock 2008.
pch_light.hpp://  Copyright John Maddock 2008.
poisson_quantile.ipp://  (C) Copyright John Maddock 2006-7.
pow_test.cpp://  (C) Copyright Bruno Lalande 2008.
powm1_sqrtp1m1_test.cpp://  (C) Copyright John Maddock 2006.
powm1_sqrtp1m1_test.hpp://  Copyright John Maddock 2006.
s_.ipp:// Copyright (c) 2006 Johan Rade
s_.ipp:// Copyright (c) 2012 Paul A. Bristow
sinc_test.hpp://  (C) Copyright Hubert Holin 2003.
sinhc_test.hpp://  (C) Copyright Hubert Holin 2003.
special_functions_test.cpp://  (C) Copyright Hubert Holin 2003.
special_functions_test.cpp:    BOOST_TEST_MESSAGE("(C) Copyright Hubert Holin 2003-2005.");
sph_bessel_data.ipp://  Copyright (c) 2007 John Maddock
sph_neumann_data.ipp://  Copyright (c) 2007 John Maddock
spherical_harmonic.ipp://  (C) Copyright John Maddock 2006-7.
std_real_concept_check.cpp://  Copyright John Maddock 2006.
table_type.hpp:// Copyright John Maddock 2012.
test_airy.cpp://  Copyright John Maddock 2012
test_archive.cpp:// Copyright (c) 2006 Johan Rade
test_archive.cpp:// Copyright (c) 2011 Paul A. Bristow - filename changes for boost-trunk.
test_basic_nonfinite.cpp:// Copyright (c) 2006 Johan Rade
test_basic_nonfinite.cpp:// Copyright (c) 2011 Paul A. Bristow comments
test_basic_nonfinite.cpp:// Copyright (c) 2011 John Maddock
test_bernoulli.cpp:// Copyright John Maddock 2006.
test_bernoulli.cpp:// Copyright  Paul A. Bristow 2007, 2012.
test_bessel_airy_zeros.cpp://  Copyright John Maddock 2013
test_bessel_airy_zeros.cpp://  Copyright Christopher Kormanyos 2013.
test_bessel_airy_zeros.cpp://  Copyright Paul A. Bristow 2013.
test_bessel_hooks.hpp://  (C) Copyright John Maddock 2007.
test_bessel_i.cpp://  (C) Copyright John Maddock 2007.
test_bessel_i.hpp://  (C) Copyright John Maddock 2007.
test_bessel_j.cpp://  (C) Copyright John Maddock 2007.
test_bessel_j.hpp://  (C) Copyright John Maddock 2007.
test_bessel_k.cpp://  Copyright John Maddock 2006, 2007
test_bessel_k.cpp://  Copyright Paul A. Bristow 2007
test_bessel_k.hpp://  (C) Copyright John Maddock 2007.
test_bessel_y.cpp://  (C) Copyright John Maddock 2007.
test_bessel_y.hpp://  (C) Copyright John Maddock 2007.
test_beta.cpp:// Copyright John Maddock 2006.
test_beta.cpp:// Copyright Paul A. Bristow 2007, 2009
test_beta.hpp:// Copyright John Maddock 2006.
test_beta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_beta_dist.cpp:// Copyright John Maddock 2006.
test_beta_dist.cpp:// Copyright  Paul A. Bristow 2007, 2009, 2010, 2012.
test_beta_hooks.hpp://  (C) Copyright John Maddock 2006.
test_binomial.cpp:// Copyright John Maddock 2006.
test_binomial.cpp:// Copyright  Paul A. Bristow 2007.
test_binomial_coeff.cpp://  (C) Copyright John Maddock 2006.
test_binomial_coeff.hpp:// Copyright John Maddock 2006.
test_binomial_coeff.hpp:// Copyright Paul A. Bristow 2007, 2009
test_carlson.cpp://  Copyright 2006 John Maddock
test_carlson.cpp:// Copyright Paul A. Bristow 2007.
test_carlson.hpp:// Copyright John Maddock 2006.
test_carlson.hpp:// Copyright Paul A. Bristow 2007, 2009
test_cauchy.cpp:// Copyright John Maddock 2006, 2007.
test_cauchy.cpp:// Copyright Paul A. Bristow 2007
test_cbrt.cpp://  Copyright John Maddock 2006.
test_cbrt.cpp://  Copyright Paul A. Bristow 2010
test_cbrt.hpp:// Copyright John Maddock 2006.
test_cbrt.hpp:// Copyright Paul A. Bristow 2007, 2009
```

```
test_chi_squared.cpp:// Copyright Paul A. Bristow 2006.
test_chi_squared.cpp:// Copyright John Maddock 2007.
test_classify.cpp://  Copyright John Maddock 2006.
test_classify.cpp://  Copyright Paul A. Bristow 2007
test_common_factor_gmpxx.cpp://  (C) Copyright John Maddock 2010.
test_constant_generate.cpp:// Copyright John Maddock 2010.
test_constants.cpp:// Copyright Paul Bristow 2007, 2011.
test_constants.cpp:// Copyright John Maddock 2006, 2011.
test_digamma.cpp://  (C) Copyright John Maddock 2006.
test_digamma.hpp:// Copyright John Maddock 2006.
test_digamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_dist_overloads.cpp:// Copyright John Maddock 2006.
test_dist_overloads.cpp:// Copyright Paul A. Bristow 2007.
test_ellint_1.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_1.cpp://  Copyright John Maddock 2006, 2007
test_ellint_1.cpp://  Copyright Paul A. Bristow 2007
test_ellint_1.hpp:// Copyright John Maddock 2006.
test_ellint_1.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ellint_2.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_2.cpp://  Copyright John Maddock 2006, 2007
test_ellint_2.cpp://  Copyright Paul A. Bristow 2007
test_ellint_2.hpp:// Copyright John Maddock 2006.
test_ellint_2.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ellint_3.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_3.cpp://  Copyright John Maddock 2006, 2007
test_ellint_3.cpp://  Copyright Paul A. Bristow 2007
test_ellint_3.hpp:// Copyright John Maddock 2006.
test_ellint_3.hpp:// Copyright Paul A. Bristow 2007, 2009
test_erf.cpp://  Copyright John Maddock 2006.
test_erf.cpp://  Copyright Paul A. Bristow 2007
test_erf.hpp:// Copyright John Maddock 2006.
test_erf.hpp:// Copyright Paul A. Bristow 2007, 2009
test_erf_hooks.hpp://  (C) Copyright John Maddock 2006.
test_error_handling.cpp:// Copyright Paul A. Bristow 2006-7.
test_error_handling.cpp:// Copyright John Maddock 2006-7.
test_expint.cpp://  (C) Copyright John Maddock 2007.
test_expint.hpp:// Copyright John Maddock 2006.
test_expint.hpp:// Copyright Paul A. Bristow 2007, 2009
test_expint_hooks.hpp://  (C) Copyright John Maddock 2006.
test_exponential_dist.cpp:// Copyright John Maddock 2006.
test_exponential_dist.cpp:// Copyright Paul A. Bristow 2007.
test_extreme_value.cpp:// Copyright John Maddock 2006.
test_factorials.cpp://  Copyright John Maddock 2006.
test_find_location.cpp:// Copyright John Maddock 2007.
test_find_location.cpp:// Copyright Paul A. Bristow 2007.
test_find_scale.cpp:// Copyright John Maddock 2007.
test_find_scale.cpp:// Copyright Paul A. Bristow 2007.
test_fisher_f.cpp:// Copyright Paul A. Bristow 2006.
test_fisher_f.cpp:// Copyright John Maddock 2007.
test_fisher_f.cpp:   // Distcalc version 1.2 Copyright 2002 H Lohninger, TU Wein
test_gamma.cpp://  (C) Copyright John Maddock 2006.
test_gamma.hpp:// Copyright John Maddock 2006.
test_gamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_gamma_data.ipp://  (C) Copyright John Maddock 2006.
test_gamma_dist.cpp:// Copyright John Maddock 2006.
test_gamma_dist.cpp:// Copyright Paul A. Bristow 2007, 2010.
test_gamma_hooks.hpp://  (C) Copyright John Maddock 2006.
test_geometric.cpp:// Copyright Paul A. Bristow 2010.
test_geometric.cpp:// Copyright John Maddock 2010.
test_hankel.cpp://  Copyright John Maddock 2012
test_hermite.cpp://  Copyright John Maddock 2006, 2007
test_hermite.cpp://  Copyright Paul A. Bristow 2007
test_hermite.hpp:// Copyright John Maddock 2006.
test_hermite.hpp:// Copyright Paul A. Bristow 2007, 2009
test_hypergeometric_dist.cpp:// Copyright John Maddock 2008
test_hypergeometric_dist.cpp:// Copyright Paul A. Bristow
test_hypergeometric_dist.cpp:// Copyright Gautam Sewani
```

```
test_ibeta.cpp://  (C) Copyright John Maddock 2006.
test_ibeta.hpp:// Copyright John Maddock 2006.
test_ibeta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ibeta_inv.cpp://  (C) Copyright John Maddock 2006.
test_ibeta_inv.hpp:// Copyright John Maddock 2006.
test_ibeta_inv.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ibeta_inv_ab.cpp://  (C) Copyright John Maddock 2006.
test_ibeta_inv_ab.hpp:// Copyright John Maddock 2006.
test_ibeta_inv_ab.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma.cpp://  (C) Copyright John Maddock 2006.
test_igamma.hpp:// Copyright John Maddock 2006.
test_igamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma_inv.cpp://  (C) Copyright John Maddock 2006.
test_igamma_inv.hpp:// Copyright John Maddock 2006.
test_igamma_inv.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma_inva.cpp://  (C) Copyright John Maddock 2006.
test_igamma_inva.hpp:// Copyright John Maddock 2006.
test_igamma_inva.hpp:// Copyright Paul A. Bristow 2007, 2009
test_instances/double_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/Jamfile.v2:# Copyright ohn Maddock 2012
test_instances/real_concept_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/pch.hpp://  Copyright John Maddock 2012.
test_instances/ldouble_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/long_double_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/test_instances.hpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instantiate1.cpp://  Copyright John Maddock 2006.
test_instantiate2.cpp://  Copyright John Maddock 2006.
test_inv_hyp.cpp://  (C) Copyright John Maddock 2006.
test_inverse_chi_squared.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_chi_squared.cpp:// Copyright John Maddock 2010.
test_inverse_chi_squared_distribution.cpp:// Copyright Paul A. Bristow 2010.
```

```
test_inverse_chi_squared_distribution.cpp:// Copyright John Maddock 2010.
test_inverse_gamma_distribution.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_gamma_distribution.cpp:// Copyright John Maddock 2010.
test_inverse_gaussian.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_gaussian.cpp:// Copyright John Maddock 2010.
test_jacobi.cpp://  Copyright John Maddock 2012
test_jacobi.hpp:// Copyright John Maddock 2006.
test_jacobi.hpp:// Copyright Paul A. Bristow 2007, 2009
test_laguerre.cpp://  (C) Copyright John Maddock 2006.
test_laguerre.hpp:// Copyright John Maddock 2006.
test_laguerre.hpp:// Copyright Paul A. Bristow 2007, 2009
test_laplace.cpp://  Copyright Thijs van den Berg, 2008.
test_laplace.cpp://  Copyright John Maddock 2008.
test_laplace.cpp://  Copyright Paul A. Bristow 2008, 2009.
test_ldouble_simple.cpp:// Copyright John Maddock 2013.
test_legacy_nonfinite.cpp:// Copyright (c) 2006 Johan Rade
test_legacy_nonfinite.cpp:// Copyright (c) 2011 Paul A. Bristow comments
test_legendre.cpp://  (C) Copyright John Maddock 2006.
test_legendre.hpp:// Copyright John Maddock 2006.
test_legendre.hpp:// Copyright Paul A. Bristow 2007, 2009
test_legendre_hooks.hpp://  (C) Copyright John Maddock 2006.
test_lexical_cast.cpp:// Copyright (c) 2006 Johan Rade
test_lexical_cast.cpp:// Copyright (c) 2011 Paul A. Bristow incorporated Boost.Math
test_logistic_dist.cpp:// Copyright 2008 Gautam Sewani
test_lognormal.cpp:// Copyright John Maddock 2006.
test_lognormal.cpp:// Copyright Paul A. Bristow 2007
test_long_double_support.cpp:// Copyright John Maddock 2009
test_math_fwd.cpp://  Copyright John Maddock 2010.
test_math_fwd.cpp://  Copyright Paul A. Bristow 2010.
test_minima.cpp://  Copyright John Maddock 2006.
test_minima.cpp://  Copyright Paul A. Bristow 2007.
test_nc_beta.cpp:// Copyright John Maddock 2008.
test_nc_chi_squared.cpp:// Copyright John Maddock 2008.
test_nc_f.cpp:// Copyright John Maddock 2008.
test_nc_t.cpp:// Copyright John Maddock 2008, 2012.
test_nc_t.cpp:// Copyright Paul A. Bristow 2012.
test_ncbeta_hooks.hpp://  (C) Copyright John Maddock 2008.
test_nccs_hooks.hpp://  (C) Copyright John Maddock 2008.
test_negative_binomial.cpp:// Copyright Paul A. Bristow 2007.
test_negative_binomial.cpp:// Copyright John Maddock 2006.
test_next.cpp://  (C) Copyright John Maddock 2008.
test_nonfinite_io.cpp:// Copyright 2011 Paul A. Bristow
test_nonfinite_trap.cpp:// Copyright (c) 2006 Johan Rade
test_nonfinite_trap.cpp:// Copyright (c) 2011 Paul A. Bristow To incorporate into Boost.Math
test_normal.cpp:// Copyright Paul A. Bristow 2010.
test_normal.cpp:// Copyright John Maddock 2007.
test_out_of_range.hpp:// Copyright John Maddock 2012.
test_owens_t.cpp:// Copyright Paul A. Bristow 2012.
test_owens_t.cpp:// Copyright Benjamin Sobotta 2012.
test_pareto.cpp:// Copyright Paul A. Bristow 2007, 2009.
test_pareto.cpp:// Copyright John Maddock 2006.
test_poisson.cpp:// Copyright Paul A. Bristow 2007.
test_poisson.cpp:// Copyright John Maddock 2006.
test_policy.cpp:// Copyright John Maddock 2007.
test_policy_2.cpp:// Copyright John Maddock 2007.
test_policy_3.cpp:// Copyright John Maddock 2007.
test_policy_4.cpp:// Copyright John Maddock 2007.
test_policy_5.cpp:// Copyright John Maddock 2007.
test_policy_6.cpp:// Copyright John Maddock 2007.
test_policy_7.cpp:// Copyright John Maddock 2007.
test_policy_8.cpp:// Copyright John Maddock 2007.
test_policy_sf.cpp://  (C) Copyright John Maddock 2007.
test_print_info_on_type.cpp:// Copyright John Maddock 2010.
test_rational_instances/test_rational_ldouble2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double3.cpp://  (C) Copyright John Maddock 2006-7.
```

```
test_rational_instances/test_rational_ldouble1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational.hpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float1.cpp://  (C) Copyright John Maddock 2006-7.
test_rationals.cpp://  (C) Copyright John Maddock 2006.
test_rayleigh.cpp:// Copyright John Maddock 2006.
test_real_concept.cpp:// Copyright John Maddock 2010
test_real_concept_neg_bin.cpp:// Copyright Paul A. Bristow 2010.
test_real_concept_neg_bin.cpp:// Copyright John Maddock 2010.
test_remez.cpp://  Copyright John Maddock 2006
test_remez.cpp://  Copyright Paul A. Bristow 2007
test_roots.cpp://  (C) Copyright John Maddock 2006.
test_round.cpp://  (C) Copyright John Maddock 2007.
test_sign.cpp:#define BOOST_TEST_MAIN// Copyright John Maddock 2008
test_sign.cpp://  (C) Copyright Paul A. Bristow 2011 (added tests for changesign)
test_signed_zero.cpp:// Copyright 2006 Johan Rade
test_signed_zero.cpp:// Copyright 2011 Paul A. Bristow  To incorporate into Boost.Math
test_signed_zero.cpp:// Copyright 2012 Paul A. Bristow with new tests.
test_skew_normal.cpp:// Copyright Paul A. Bristow 2012.
test_skew_normal.cpp:// Copyright John Maddock 2012.
test_skew_normal.cpp:// Copyright Benjamin Sobotta 2012
test_spherical_harmonic.cpp://  (C) Copyright John Maddock 2006.
test_students_t.cpp:// Copyright Paul A. Bristow 2006.
test_students_t.cpp:// Copyright John Maddock 2006.
test_tgamma_ratio.cpp://  (C) Copyright John Maddock 2006.
test_tgamma_ratio.hpp:// Copyright John Maddock 2006.
test_tgamma_ratio.hpp:// Copyright Paul A. Bristow 2007, 2009
test_toms748_solve.cpp://  (C) Copyright John Maddock 2006.
test_tr1.c:/*  (C) Copyright John Maddock 2008.
test_tr1.cpp://  (C) Copyright John Maddock 2008.
test_triangular.cpp:// Copyright Paul Bristow 2006, 2007.
test_triangular.cpp:// Copyright John Maddock 2006, 2007.
test_uniform.cpp:// Copyright Paul Bristow 2007.
test_uniform.cpp:// Copyright John Maddock 2006.
test_weibull.cpp:// Copyright John Maddock 2006, 2012.
test_weibull.cpp:// Copyright Paul A. Bristow 2007, 2012.
test_zeta.cpp://  (C) Copyright John Maddock 2006.
test_zeta.hpp:// Copyright John Maddock 2006.
test_zeta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_zeta_hooks.hpp://  (C) Copyright John Maddock 2006.
tgamma_delta_ratio_data.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_delta_ratio_int.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_delta_ratio_int2.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_ratio_data.ipp://  (C) Copyright John Maddock 2006-7.
zeta_1_below_data.ipp://  Copyright John Maddock 2008.
zeta_1_up_data.ipp://  Copyright John Maddock 2008.
zeta_data.ipp://  Copyright John Maddock 2008.
zeta_neg_data.ipp://  Copyright John Maddock 2008.
ztest_max_digits10.cpp: // Copyright 2010 Paul A. Bristow
zztest_max_digits10.cpp:// Copyright 2010 Paul A. Bristow

Copyright (c) 2001-2002 Enthought, Inc. 2003-2024, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
```

```
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----
This binary distribution of SciPy also bundles the following software:
Name: OpenBLAS
Files: scipy.libs/libopenblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: scipy.libs/libopenblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
```

```
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: libquadmath
Files: scipy.libs/libquadmath*.so
Description: dynamically linked to files compiled with gcc
Availability: https://gcc.gnu.org/git/?p=gcc.git;a=tree;f=libquadmath
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

The SciPy repository and source distributions bundle a number of libraries that
are compatibly licensed.  We list these here.

Name: Decorator
Copyright (c) 2005-2018, Michele Simionato
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
Redistributions in bytecode form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in
the documentation and/or other materials provided with the
distribution.
```

```
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

Name: fast_matrix_market
Copyright (C) 2020-2023 Adam Lugowski
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
1. Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF
USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

Name: pystreambuf
cctbx Copyright (c) 2006, The Regents of the University of
California, through Lawrence Berkeley National Laboratory (subject to
receipt of any required approvals from the U.S. Dept. of Energy).  All
rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
(3) Neither the name of the University of California, Lawrence Berkeley
National Laboratory, U.S. Dept. of Energy nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER
OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
You are under no obligation whatsoever to provide any bug fixes,
patches, or upgrades to the features, functionality or performance of
the source code ("Enhancements") to anyone; however, if you choose to
make your Enhancements available either publicly, or directly to
```

```
Lawrence Berkeley National Laboratory, without imposing a separate
written license agreement for such Enhancements, then you hereby grant
the following license: a  non-exclusive, royalty-free perpetual license
to install, use, modify, prepare derivative works, incorporate into
other computer software, distribute, and sublicense such enhancements or
derivative works thereof, in binary and source code form.

Name: fast_float
Copyright (c) 2021 The fast_float authors
Permission is hereby granted, free of charge, to any
person obtaining a copy of this software and associated
documentation files (the "Software"), to deal in the
Software without restriction, including without
limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software
is furnished to do so, subject to the following
conditions:
The above copyright notice and this permission notice
shall be included in all copies or substantial portions
of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED
TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT
SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR
IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ryu
License: BSL-1.0
Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ID
The present document and all of the software
in the accompanying distribution (which is contained in the directory
id_dist and its subdirectories, or in the file id_dist.tar.gz, is
Copyright (c) 2014 by P.-G. Martinsson, V. Rokhlin,
Y. Shkolnisky, and M. Tygert.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
* Redistributions of source code must retain the above copyright
notice, this list of conditions, and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright
```

```
notice, this list of conditions, and the following disclaimer in the
documentation and/or other materials provided with the distribution.
* None of the names of the copyright holders may be used to endorse
or promote products derived from this software without specific prior
written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNERS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: L-BFGS-B
License: BSD license
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
The version included here (in lbfgsb.f) is 3.0 (released April 25, 2011). It was
written by Ciyou Zhu, Richard Byrd, and Jorge Nocedal <nocedal@ece.nwu.edu>. It
carries the following condition for use:
  """
  This software is freely available, but we expect that all publications
  describing work using this software, or all commercial products using it,
  quote at least one of the references given below. This software is released
  under the BSD License.
  References
    * R. H. Byrd, P. Lu and J. Nocedal. A Limited Memory Algorithm for Bound
      Constrained Optimization, (1995), SIAM Journal on Scientific and
      Statistical Computing, 16, 5, pp. 1190-1208.
    * C. Zhu, R. H. Byrd and J. Nocedal. L-BFGS-B: Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (1997),
      ACM Transactions on Mathematical Software, 23, 4, pp. 550 - 560.
    * J.L. Morales and J. Nocedal. L-BFGS-B: Remark on Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (2011),
      ACM Transactions on Mathematical Software, 38, 1.
  """

-------------------------------------------------------------------------------
Name: LAPJVsp
License: 3-clause BSD
Copyright 1987-, A. Volgenant/Amsterdam School of Economics,
                 University of Amsterdam
  Distributed under 3-clause BSD license with permission from
  University of Amsterdam.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
```

```
     this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
    without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
  CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
  ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
  POSSIBILITY OF SUCH DAMAGE.

Name: SuperLU
License: 3-clause BSD
Copyright (c) 2003, The Regents of the University of California, through
Lawrence Berkeley National Laboratory (subject to receipt of any required
approvals from U.S. Dept. of Energy)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
(3) Neither the name of Lawrence Berkeley National Laboratory, U.S. Dept. of
Energy nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ARPACK
License: 3-clause BSD
Pertains to ARPACK and P_ARPACK
Copyright (c) 1996-2008 Rice University.
Developed by D.C. Sorensen, R.B. Lehoucq, C. Yang, and K. Maschhoff.
All rights reserved.
Arpack has been renamed to arpack-ng.
Copyright (c) 2001-2011 - Scilab Enterprises
Updated by Allan Cornet, Sylvestre Ledru.
Copyright (c) 2010 - Jordi Gutiérrez Hermoso (Octave patch)
Copyright (c) 2007 - Sébastien Fabbro (gentoo patch)
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
```

```
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Qhull
License: Qhull license (BSD-like)
 Qhull, Copyright (c) 1993-2020
C.B. Barber
Arlington, MA
and
The National Science and Technology Research Center for
Computation and Visualization of Geometric Structures
(The Geometry Center)
University of Minnesota
email: qhull@qhull.org
This software includes Qhull from C.B. Barber and The Geometry Center.
Qhull is copyrighted as noted above.  Qhull is free software and may
be obtained via http from www.qhull.org.  It may be freely copied, modified,
and redistributed under the following conditions:
1. All copyright notices must remain intact in all files.
2. A copy of this text file must be distributed along with any copies
   of Qhull that you redistribute; this includes copies that you have
   modified, or copies of programs or other software products that
   include Qhull.
3. If you modify Qhull, you must include a notice giving the
   name of the person performing the modification, the date of
   modification, and the reason for such modification.
4. When distributing modified versions of Qhull, or other software
   products that include Qhull, you must provide notice that the original
   source code may be obtained as noted above.
5. There is no warranty or other guarantee of fitness for Qhull, it is
   provided solely "as is".  Bug reports or fixes may be sent to
   qhull_bug@qhull.org; the authors may or may not act on them as
   they desire.

Name: Cephes
Distributed under 3-clause BSD license with permission from the author,
see https://lists.debian.org/debian-legal/2004/12/msg00295.html
Cephes Math Library Release 2.8:  June, 2000
Copyright 1984, 1995, 2000 by Stephen L. Moshier
This software is derived from the Cephes Math Library and is
incorporated herein by permission of the author.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of the <organization> nor the
      names of its contributors may be used to endorse or promote products
      derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
```

```
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Faddeeva
  Copyright (c) 2012 Massachusetts Institute of Technology
  Permission is hereby granted, free of charge, to any person obtaining
  a copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
  distribute, sublicense, and/or sell copies of the Software, and to
  permit persons to whom the Software is furnished to do so, subject to
  the following conditions:
  The above copyright notice and this permission notice shall be
  included in all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
  EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
  NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
  LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
  OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
  WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: qd
License: modified BSD license ("BSD-LBNL-License.doc")
  This work was supported by the Director, Office of Science, Division
  of Mathematical, Information, and Computational Sciences of the
  U.S. Department of Energy under contract numbers DE-AC03-76SF00098 and
  DE-AC02-05CH11231.
  Copyright (c) 2003-2009, The Regents of the University of California,
  through Lawrence Berkeley National Laboratory (subject to receipt of
  any required approvals from U.S. Dept. of Energy) All rights reserved.
  1. Redistribution and use in source and binary forms, with or
  without modification, are permitted provided that the following
  conditions are met:
  (1) Redistributions of source code must retain the copyright
  notice, this list of conditions and the following disclaimer.
  (2) Redistributions in binary form must reproduce the copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.
  (3) Neither the name of the University of California, Lawrence
  Berkeley National Laboratory, U.S. Dept. of Energy nor the names
  of its contributors may be used to endorse or promote products
  derived from this software without specific prior written
  permission.
  2. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
  3. You are under no obligation whatsoever to provide any bug fixes,
  patches, or upgrades to the features, functionality or performance of
  the source code ("Enhancements") to anyone; however, if you choose to
  make your Enhancements available either publicly, or directly to
  Lawrence Berkeley National Laboratory, without imposing a separate
  written license agreement for such Enhancements, then you hereby grant
  the following license: a non-exclusive, royalty-free perpetual license
  to install, use, modify, prepare derivative works, incorporate into
```

```
  other computer software, distribute, and sublicense such enhancements
  or derivative works thereof, in binary and source code form.

Name: pypocketfft
Copyright (C) 2010-2019 Max-Planck-Society All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    Redistributions of source code must retain the above copyright notice,
    this list of conditions and the following disclaimer.
    Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in
    the documentation and/or other materials provided with the distribution.
    Neither the name of the copyright holder nor the names of its
    contributors may be used to endorse or promote products derived
    from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE,
EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: uarray
License: 3-Clause BSD
Copyright (c) 2018, Quansight-Labs
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ampgo
License: MIT
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
```

```
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: pybind11
License:
  Copyright (c) 2016 Wenzel Jakob <wenzel.jakob@epfl.ch>, All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice, this
     list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
     and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
  FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: HiGHS
License: MIT
Copyright (c) 2021 ERGO-Code
    IPX and BASICLU, Copyright (c) 2018-2021  ERGO-Code
    Used in HiGHS under the MIT license.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: Boost
License: Boost Software License - Version 1.0
Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
```

```
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: Biasedurn
License 3-Clause BSD
---------- Forwarded message ---------
From: Agner Fog <agner@agner.org>
Date: Wed, Jul 22, 2020 at 8:54 PM
Subject: Re: Add BiasedUrn to SciPy?
To: Matt Haberland <mhaberla@calpoly.edu>
Cc: Warren Weckesser <warren.weckesser@gmail.com>
Dear Matt The C++ code for these distributions without binding to the R project
are available here:
https://www.agner.org/random/stocc.zip
You have my permission to use it in SciPy under the new BSD license.
Best regards,
Agner Fog
On 22/07/2020 17.05, Matt Haberland wrote:
Hi Agner, I'm a maintainer of the Python scientific computing library SciPy,
and I'm working on improving the capabilities of our statistics subpackage
scipy.stats. We'd like to add both Fisher's and Wallenius' noncentral
hypergeometric distributions, but these look quite challenging to implement.
We found your BiasedUrn package, and we'd love to wrap it, but we can't
include GPL-3 licensed code under our BSD-new license. Would you consider
re-licensing BiasedUrn under a more permissive license, such as BSD-new or
MIT, so we can include it in SciPy?
Thank you for considering it!
Matt
--
Matt Haberland
Assistant Professor
BioResource and Agricultural Engineering
08A-3K, Cal Poly

Name: UNU.RAN
License 3-Clause BSD
Permission was granted on 23 March 2021 by Josef Leydold
(josef.leydold@wu.ac.at) and Wolfgang Hoermann (hormannw@bound.edu.tr)
to use the UNU.RAN code excluding the uniform random number generator
in src/uniform/mrg31k3p.c (copyright by Renee Touzin)
under the BSD licence. The following files have been removed from the
original library:
    unuran-1.8.1/COPYING
    unuran-1.8.1/INSTALL
    unuran-1.8.1/Makefile.am
    unuran-1.8.1/Makefile.in
    unuran-1.8.1/NEWS
    unuran-1.8.1/UPGRADE
    unuran-1.8.1/acinclude.m4
    unuran-1.8.1/aclocal.m4
    unuran-1.8.1/autoconf/config.guess
    unuran-1.8.1/autoconf/config.sub
    unuran-1.8.1/autoconf/depcomp
    unuran-1.8.1/autoconf/install-sh
    unuran-1.8.1/autoconf/ltmain.sh
    unuran-1.8.1/autoconf/mdate-sh
    unuran-1.8.1/autoconf/missing
    unuran-1.8.1/autogen.sh
    unuran-1.8.1/configure
    unuran-1.8.1/doc/Makefile.am
    unuran-1.8.1/doc/Makefile.in
    unuran-1.8.1/doc/figures/Makefile.am
    unuran-1.8.1/doc/figures/Makefile.in
    unuran-1.8.1/doc/figures/discrete_inversion.eps
    unuran-1.8.1/doc/figures/discrete_inversion.pdf
```

```
unuran-1.8.1/doc/figures/discrete_inversion.png
unuran-1.8.1/doc/figures/discrete_inversion.txt
unuran-1.8.1/doc/figures/inversion.eps
unuran-1.8.1/doc/figures/inversion.pdf
unuran-1.8.1/doc/figures/inversion.png
unuran-1.8.1/doc/figures/inversion.txt
unuran-1.8.1/doc/figures/rejection_from_constant_hat.eps
unuran-1.8.1/doc/figures/rejection_from_constant_hat.pdf
unuran-1.8.1/doc/figures/rejection_from_constant_hat.png
unuran-1.8.1/doc/figures/rejection_from_constant_hat.txt
unuran-1.8.1/doc/figures/rou-cauchy.eps
unuran-1.8.1/doc/figures/rou-cauchy.pdf
unuran-1.8.1/doc/figures/rou-cauchy.png
unuran-1.8.1/doc/figures/rou-cauchy.txt
unuran-1.8.1/doc/figures/texpict2img.pl
unuran-1.8.1/doc/src/Makefile.am
unuran-1.8.1/doc/src/Makefile.in
unuran-1.8.1/doc/src/README
unuran-1.8.1/doc/src/arvag.dh
unuran-1.8.1/doc/src/error_debug.dh
unuran-1.8.1/doc/src/examples.dh
unuran-1.8.1/doc/src/glossary.dh
unuran-1.8.1/doc/src/index.dh
unuran-1.8.1/doc/src/installation.dh
unuran-1.8.1/doc/src/intro.dh
unuran-1.8.1/doc/src/make_texi.pl
unuran-1.8.1/doc/src/methods.dh
unuran-1.8.1/doc/src/methods_cemp.texi
unuran-1.8.1/doc/src/methods_cont.texi
unuran-1.8.1/doc/src/methods_cvec.texi
unuran-1.8.1/doc/src/methods_cvemp.texi
unuran-1.8.1/doc/src/methods_discr.texi
unuran-1.8.1/doc/src/methods_matr.texi
unuran-1.8.1/doc/src/methods_mcmc.texi
unuran-1.8.1/doc/src/misc.dh
unuran-1.8.1/doc/src/ref_example0.texi
unuran-1.8.1/doc/src/ref_example0_str.texi
unuran-1.8.1/doc/src/ref_example1.texi
unuran-1.8.1/doc/src/ref_example1_str.texi
unuran-1.8.1/doc/src/ref_example2.texi
unuran-1.8.1/doc/src/ref_example2_str.texi
unuran-1.8.1/doc/src/ref_example3.texi
unuran-1.8.1/doc/src/ref_example3_str.texi
unuran-1.8.1/doc/src/ref_example_FuncStr.texi
unuran-1.8.1/doc/src/ref_example_anti.texi
unuran-1.8.1/doc/src/ref_example_anti_str.texi
unuran-1.8.1/doc/src/ref_example_cext.texi
unuran-1.8.1/doc/src/ref_example_cont.texi
unuran-1.8.1/doc/src/ref_example_cont_str.texi
unuran-1.8.1/doc/src/ref_example_dext.texi
unuran-1.8.1/doc/src/ref_example_discr.texi
unuran-1.8.1/doc/src/ref_example_discr_str.texi
unuran-1.8.1/doc/src/ref_example_emp.texi
unuran-1.8.1/doc/src/ref_example_emp_str.texi
unuran-1.8.1/doc/src/ref_example_gsl.texi
unuran-1.8.1/doc/src/ref_example_mixt.texi
unuran-1.8.1/doc/src/ref_example_mixt_inv.texi
unuran-1.8.1/doc/src/ref_example_rngstreams.texi
unuran-1.8.1/doc/src/ref_example_vemp.texi
unuran-1.8.1/doc/src/ref_example_win32_1.texi
unuran-1.8.1/doc/src/ref_example_win32_2.texi
unuran-1.8.1/doc/src/references.dh
unuran-1.8.1/doc/src/stddist.dh
unuran-1.8.1/doc/src/texinfo.tex
unuran-1.8.1/doc/src/top.dh
unuran-1.8.1/doc/src/unuran_src.texi
unuran-1.8.1/doc/stamp-1
```

```
    unuran-1.8.1/doc/stamp-vti
    unuran-1.8.1/doc/unuran.html
    unuran-1.8.1/doc/unuran.info
    unuran-1.8.1/doc/unuran.pdf
    unuran-1.8.1/doc/unuran.texi
    unuran-1.8.1/doc/unuran.txt
    unuran-1.8.1/doc/unuran_win32.html
    unuran-1.8.1/doc/unuran_win32.info
    unuran-1.8.1/doc/unuran_win32.pdf
    unuran-1.8.1/doc/unuran_win32.texi
    unuran-1.8.1/doc/unuran_win32_libname.texi
    unuran-1.8.1/doc/version.texi
    unuran-1.8.1/doc/version_win32.texi
    unuran-1.8.1/examples/Makefile.am
    unuran-1.8.1/examples/Makefile.in
    unuran-1.8.1/examples/example0.c
    unuran-1.8.1/examples/example0_str.c
    unuran-1.8.1/examples/example1.c
    unuran-1.8.1/examples/example1_str.c
    unuran-1.8.1/examples/example2.c
    unuran-1.8.1/examples/example2_str.c
    unuran-1.8.1/examples/example3.c
    unuran-1.8.1/examples/example3_str.c
    unuran-1.8.1/examples/example_FuncStr.c
    unuran-1.8.1/examples/example_anti.c
    unuran-1.8.1/examples/example_anti_str.c
    unuran-1.8.1/examples/example_cext.c
    unuran-1.8.1/examples/example_cont.c
    unuran-1.8.1/examples/example_cont_str.c
    unuran-1.8.1/examples/example_cpp.cpp
    unuran-1.8.1/examples/example_dext.c
    unuran-1.8.1/examples/example_discr.c
    unuran-1.8.1/examples/example_discr_str.c
    unuran-1.8.1/examples/example_emp.c
    unuran-1.8.1/examples/example_emp_str.c
    unuran-1.8.1/examples/example_errorhandler.c
    unuran-1.8.1/examples/example_gsl.c
    unuran-1.8.1/examples/example_mcorr.c
    unuran-1.8.1/examples/example_mixt.c
    unuran-1.8.1/examples/example_mixt_inv.c
    unuran-1.8.1/examples/example_prng.c
    unuran-1.8.1/examples/example_prng_str.c
    unuran-1.8.1/examples/example_rngstreams.c
    unuran-1.8.1/examples/example_vemp.c
    unuran-1.8.1/experiments/Makefile.am
    unuran-1.8.1/experiments/Makefile.in
    unuran-1.8.1/experiments/make_timing_table.c
    unuran-1.8.1/experiments/timings_chap_10.conf
    unuran-1.8.1/experiments/timings_chap_8.conf
    unuran-1.8.1/scripts/Makefile.am
    unuran-1.8.1/scripts/Makefile.in
    unuran-1.8.1/scripts/compute_machine_constants.c
    unuran-1.8.1/scripts/make_urng_header.pl
    unuran-1.8.1/scripts/merge_h.pl
    unuran-1.8.1/scripts/read_PDF.pl
    unuran-1.8.1/scripts/remove_comments.pl
    unuran-1.8.1/scripts/run_valgrind.sh
    unuran-1.8.1/scripts/win32/Makefile.win32
    unuran-1.8.1/scripts/win32/build.sh
    unuran-1.8.1/scripts/win32/example1.c
    unuran-1.8.1/scripts/win32/example2.c
    unuran-1.8.1/scripts/win32/make_dll_def.pl
    unuran-1.8.1/src/Makefile.am
    unuran-1.8.1/src/Makefile.in
    unuran-1.8.1/src/README
    unuran-1.8.1/src/distr/Makefile.am
    unuran-1.8.1/src/distr/Makefile.in
```

```
    unuran-1.8.1/src/distributions/Makefile.am
    unuran-1.8.1/src/distributions/Makefile.in
    unuran-1.8.1/src/distributions/README
    unuran-1.8.1/src/methods/Makefile.am
    unuran-1.8.1/src/methods/Makefile.in
    unuran-1.8.1/src/parser/Makefile.am
    unuran-1.8.1/src/parser/Makefile.in
    unuran-1.8.1/src/parser/functparser_doc.dh
    unuran-1.8.1/src/parser/make_stringparser.pl
    unuran-1.8.1/src/parser/stringparser_doc.dh
    unuran-1.8.1/src/specfunct/Makefile.am
    unuran-1.8.1/src/specfunct/Makefile.in
    unuran-1.8.1/src/tests/Makefile.am
    unuran-1.8.1/src/tests/Makefile.in
    unuran-1.8.1/src/uniform/Makefile.am
    unuran-1.8.1/src/uniform/Makefile.in
    unuran-1.8.1/src/uniform/fish.c
    unuran-1.8.1/src/uniform/mrg31k3p.c
    unuran-1.8.1/src/uniform/mstd.c
    unuran-1.8.1/src/uniform/unuran_urng_gsl.h
    unuran-1.8.1/src/uniform/unuran_urng_prng.h
    unuran-1.8.1/src/uniform/unuran_urng_rngstreams.h
    unuran-1.8.1/src/uniform/urng_builtin.c
    unuran-1.8.1/src/uniform/urng_builtin.h
    unuran-1.8.1/src/uniform/urng_fvoid.c
    unuran-1.8.1/src/uniform/urng_fvoid.h
    unuran-1.8.1/src/uniform/urng_gsl.c
    unuran-1.8.1/src/uniform/urng_gsl.h
    unuran-1.8.1/src/uniform/urng_gslqrng.c
    unuran-1.8.1/src/uniform/urng_gslqrng.h
    unuran-1.8.1/src/uniform/urng_prng.c
    unuran-1.8.1/src/uniform/urng_prng.h
    unuran-1.8.1/src/uniform/urng_randomshift.c
    unuran-1.8.1/src/uniform/urng_randomshift.h
    unuran-1.8.1/src/uniform/urng_rngstreams.c
    unuran-1.8.1/src/uniform/urng_rngstreams.h
    unuran-1.8.1/src/unuran.h.in
    unuran-1.8.1/src/urng/Makefile.am
    unuran-1.8.1/src/urng/Makefile.in
    unuran-1.8.1/src/utils/Makefile.am
    unuran-1.8.1/src/utils/Makefile.in
    unuran-1.8.1/tests/Makefile.am
    unuran-1.8.1/tests/Makefile.in
    unuran-1.8.1/tests/README.conf
    unuran-1.8.1/tests/make_test_files.pl
    unuran-1.8.1/tests/t_arou.c
    unuran-1.8.1/tests/t_arou.conf
    unuran-1.8.1/tests/t_ars.c
    unuran-1.8.1/tests/t_ars.conf
    unuran-1.8.1/tests/t_auto.c
    unuran-1.8.1/tests/t_auto.conf
    unuran-1.8.1/tests/t_cext.c
    unuran-1.8.1/tests/t_cext.conf
    unuran-1.8.1/tests/t_cstd.c
    unuran-1.8.1/tests/t_cstd.conf
    unuran-1.8.1/tests/t_dari.c
    unuran-1.8.1/tests/t_dari.conf
    unuran-1.8.1/tests/t_dau.c
    unuran-1.8.1/tests/t_dau.conf
    unuran-1.8.1/tests/t_deprecated_tdrgw.c
    unuran-1.8.1/tests/t_deprecated_vmt.c
    unuran-1.8.1/tests/t_deprecated_vmt.conf
    unuran-1.8.1/tests/t_dext.c
    unuran-1.8.1/tests/t_dext.conf
    unuran-1.8.1/tests/t_dgt.c
    unuran-1.8.1/tests/t_dgt.conf
    unuran-1.8.1/tests/t_distr.c
```

```
    unuran-1.8.1/tests/t_distr.conf
    unuran-1.8.1/tests/t_distr_cemp.c
    unuran-1.8.1/tests/t_distr_cemp.conf
    unuran-1.8.1/tests/t_distr_condi.c
    unuran-1.8.1/tests/t_distr_condi.conf
    unuran-1.8.1/tests/t_distr_cont.c
    unuran-1.8.1/tests/t_distr_cont.conf
    unuran-1.8.1/tests/t_distr_corder.c
    unuran-1.8.1/tests/t_distr_corder.conf
    unuran-1.8.1/tests/t_distr_cvec.c
    unuran-1.8.1/tests/t_distr_cvec.conf
    unuran-1.8.1/tests/t_distr_cvemp.c
    unuran-1.8.1/tests/t_distr_cvemp.conf
    unuran-1.8.1/tests/t_distr_cxtrans.c
    unuran-1.8.1/tests/t_distr_cxtrans.conf
    unuran-1.8.1/tests/t_distr_discr.c
    unuran-1.8.1/tests/t_distr_discr.conf
    unuran-1.8.1/tests/t_distr_matr.c
    unuran-1.8.1/tests/t_distr_matr.conf
    unuran-1.8.1/tests/t_dsrou.c
    unuran-1.8.1/tests/t_dsrou.conf
    unuran-1.8.1/tests/t_dss.c
    unuran-1.8.1/tests/t_dss.conf
    unuran-1.8.1/tests/t_dstd.c
    unuran-1.8.1/tests/t_dstd.conf
    unuran-1.8.1/tests/t_empk.c
    unuran-1.8.1/tests/t_empk.conf
    unuran-1.8.1/tests/t_empl.c
    unuran-1.8.1/tests/t_empl.conf
    unuran-1.8.1/tests/t_gibbs.c
    unuran-1.8.1/tests/t_gibbs.conf
    unuran-1.8.1/tests/t_hinv.c
    unuran-1.8.1/tests/t_hinv.conf
    unuran-1.8.1/tests/t_hist.c
    unuran-1.8.1/tests/t_hist.conf
    unuran-1.8.1/tests/t_hitro.c
    unuran-1.8.1/tests/t_hrb.c
    unuran-1.8.1/tests/t_hrb.conf
    unuran-1.8.1/tests/t_hrd.c
    unuran-1.8.1/tests/t_hrd.conf
    unuran-1.8.1/tests/t_hri.c
    unuran-1.8.1/tests/t_hri.conf
    unuran-1.8.1/tests/t_info.c
    unuran-1.8.1/tests/t_info.conf
    unuran-1.8.1/tests/t_itdr.c
    unuran-1.8.1/tests/t_itdr.conf
    unuran-1.8.1/tests/t_mcorr.c
    unuran-1.8.1/tests/t_mcorr.conf
    unuran-1.8.1/tests/t_mixt.c
    unuran-1.8.1/tests/t_mvstd.c
    unuran-1.8.1/tests/t_mvstd.conf
    unuran-1.8.1/tests/t_mvtdr.c
    unuran-1.8.1/tests/t_ninv.c
    unuran-1.8.1/tests/t_ninv.conf
    unuran-1.8.1/tests/t_norta.c
    unuran-1.8.1/tests/t_norta.conf
    unuran-1.8.1/tests/t_nrou.c
    unuran-1.8.1/tests/t_nrou.conf
    unuran-1.8.1/tests/t_pinv
    unuran-1.8.1/tests/t_pinv.c
    unuran-1.8.1/tests/t_srou.c
    unuran-1.8.1/tests/t_srou.conf
    unuran-1.8.1/tests/t_ssr.c
    unuran-1.8.1/tests/t_ssr.conf
    unuran-1.8.1/tests/t_stringparser.c
    unuran-1.8.1/tests/t_stringparser.conf
    unuran-1.8.1/tests/t_tabl.c
```

```
    unuran-1.8.1/tests/t_tabl.conf
    unuran-1.8.1/tests/t_tdr.c
    unuran-1.8.1/tests/t_tdr.conf
    unuran-1.8.1/tests/t_tdr_gw.c
    unuran-1.8.1/tests/t_tdr_gw.conf
    unuran-1.8.1/tests/t_tdr_ia.c
    unuran-1.8.1/tests/t_tdr_ia.conf
    unuran-1.8.1/tests/t_tdr_ps.c
    unuran-1.8.1/tests/t_tdr_ps.conf
    unuran-1.8.1/tests/t_unif.c
    unuran-1.8.1/tests/t_unif.conf
    unuran-1.8.1/tests/t_unur_error.c
    unuran-1.8.1/tests/t_unur_error.conf
    unuran-1.8.1/tests/t_unur_tests.c
    unuran-1.8.1/tests/t_unur_tests.conf
    unuran-1.8.1/tests/t_urng.c
    unuran-1.8.1/tests/t_urng.conf
    unuran-1.8.1/tests/t_utdr.c
    unuran-1.8.1/tests/t_utdr.conf
    unuran-1.8.1/tests/t_util_matrix.c
    unuran-1.8.1/tests/t_util_matrix.conf
    unuran-1.8.1/tests/t_vempk.c
    unuran-1.8.1/tests/t_vempk.conf
    unuran-1.8.1/tests/t_vnrou.c
    unuran-1.8.1/tests/t_vnrou.conf
    unuran-1.8.1/tests/t_x_gen.c
    unuran-1.8.1/tests/t_x_gen.conf
    unuran-1.8.1/tests/test_StdDistr.c
    unuran-1.8.1/tests/test_StdDistr.m
    unuran-1.8.1/tests/test_functionparser.c
    unuran-1.8.1/tests/test_functionparser.m
    unuran-1.8.1/tests/testcounter.c
    unuran-1.8.1/tests/testdistributions/Makefile.am
    unuran-1.8.1/tests/testdistributions/Makefile.in
    unuran-1.8.1/tests/testdistributions/c_sawtooth_contpdf.c
    unuran-1.8.1/tests/testdistributions/c_sawtooth_discpdf.c
    unuran-1.8.1/tests/testdistributions/c_w_pdf_from_logpdf.c
    unuran-1.8.1/tests/testdistributions/c_with_multiple_of_pdf.c
    unuran-1.8.1/tests/testdistributions/c_wo_logpdf.c
    unuran-1.8.1/tests/testdistributions/testdistributions.h
    unuran-1.8.1/tests/testdistributions/vc_cauchy_RoU_ball.c
    unuran-1.8.1/tests/testdistributions/vc_special_correlations_ar1.c
    unuran-1.8.1/tests/testdistributions/vc_special_correlations_constantrho.c
    unuran-1.8.1/tests/testdistributions/vc_w_marginals.c
    unuran-1.8.1/tests/testdistributions/vc_wo_logpdf.c
    unuran-1.8.1/tests/testroutines.c
    unuran-1.8.1/tests/testunuran.h
    unuran-1.8.1/src/distr/deprecated_distr.c
    unuran-1.8.1/src/distr/deprecated_distr.h
    unuran-1.8.1/src/methods/deprecated_methods.c
    unuran-1.8.1/src/methods/deprecated_methods.h
    unuran-1.8.1/src/methods/deprecated_tdrgw.h
    unuran-1.8.1/src/methods/deprecated_vmt.c
    unuran-1.8.1/src/methods/deprecated_vmt.h
    unuran-1.8.1/src/methods/deprecated_vmt_struct.h
    unuran-1.8.1/src/parser/stringparser_lists.ch.in
UNU.RAN relies on a modified version of the library Cephes,
see ./src/src/specfunct/cephes_source.h

Name: NumPy
License: BSD License
Copyright (c) 2005-2022, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
```

```
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: array-api-compat
License: MIT
MIT License
Copyright (c) 2022 Consortium for Python Data API Standards
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
```

```
================================================================================
================================================================================
```

Llama-3.2-3B-Instruct

```
The Meta Llama models and their output that we make accessible as
part of Oracle Programs are (1) governed by the following Meta
Llama Community License Agreement, and (2) provided on an “as is”
basis, without any warranty or indemnification of any kind, and
we disclaim all liabilities arising from or related to such Meta
Llama models and their output.

Built with Llama

Llama 3.2 License Agreement and AUP LLAMA 3.2 COMMUNITY LICENSE AGREEMENT
Llama 3.2 Version Release Date: September 25, 2024
“Agreement” means the terms and conditions for use, reproduction, distribution
and modification of the Llama Materials set forth herein.
“Documentation” means the specifications, manuals and documentation accompanying
Llama 3.2 distributed by Meta at https://www.llama.com/docs/overview.
“Licensee” or “you” means you, or your employer or any other person or entity
(if you are entering into this Agreement on such person or entity’s behalf),
of the age required under applicable laws, rules or regulations to provide
legal consent and that has legal authority to bind your employer or such
other person or entity if you are entering in this Agreement on their behalf.
```

```
“Llama 3.2” means the foundational large language models and software and
algorithms, including machine-learning model code, trained model weights,
inference-enabling code, training-enabling code, fine-tuning enabling code
and other elements of the foregoing distributed by Meta at
https://www.llama.com/llama-downloads.

“Llama Materials” means, collectively, Meta’s proprietary Llama 3.2 and
Documentation (and any portion thereof) made available under this Agreement.
“Meta” or “we” means Meta Platforms Ireland Limited (if you are located
in or, if you are an entity, your principal place of business is in the
EEA or Switzerland) and Meta Platforms, Inc. (if you are located outside
of the EEA or Switzerland).
By clicking “I Accept” below or by using or distributing any portion
or element of the Llama Materials, you agree to be bound by this Agreement.
1. License Rights and Redistribution.
 a.  Grant of Rights. You are granted a non-exclusive, worldwide,
  non-transferable and royalty-free limited license under Meta’s
  intellectual property or other rights owned by Meta embodied in
  the Llama Materials to use, reproduce, distribute, copy, create
  derivative works of, and make modifications to the Llama Materials.
 b.  Redistribution and Use.
  i.  If you distribute or make available the Llama Materials
   (or any derivative works thereof), or a product or service
   (including another AI model) that contains any of them, you
   shall (A) provide a copy of this Agreement with any such
   Llama Materials; and (B) prominently display “Built with Llama”
   on a related website, user interface, blogpost, about page, or
   product documentation. If you use the Llama Materials or any
   outputs or results of the Llama Materials to create, train,
   fine tune, or otherwise improve an AI model, which is distributed
   or made available, you shall also include “Llama” at the beginning
   of any such AI model name.
  ii. If you receive Llama Materials, or any derivative works thereof,
   from a Licensee as part of an integrated end user product, then
   Section 2 of this Agreement will not apply to you.
  iii.You must retain in all copies of the Llama Materials that you
   distribute the following attribution notice within a “Notice” text
   file distributed as a part of such copies: “Llama 3.2 is licensed
   under the Llama 3.2 Community License, Copyright © Meta Platforms, Inc.
   All Rights Reserved.”
  iv. Your use of the Llama Materials must comply with applicable laws and
   regulations (including trade compliance laws and regulations) and adhere
   to the Acceptable Use Policy for the Llama Materials (available at
   https://www.llama.com/llama3_2/use-policy ), which is hereby incorporated
   by reference into this Agreement.
2.  Additional Commercial Terms. If, on the Llama 3.2 version release date,
 the monthly active users of the products or services made available by
 or for Licensee, or Licensee’s affiliates, is greater than 700 million
 monthly active users in the preceding calendar month, you must request
 a license from Meta, which Meta may grant to you in its sole discretion,
 and you are not authorized to exercise any of the rights under this
 Agreement unless or until Meta otherwise expressly grants you such rights.
3.  Disclaimer of Warranty. UNLESS REQUIRED BY APPLICABLE LAW, THE LLAMA
 MATERIALS AND ANY OUTPUT AND RESULTS THEREFROM ARE PROVIDED ON AN
 “AS IS” BASIS, WITHOUT WARRANTIES OF ANY KIND, AND META DISCLAIMS
 ALL WARRANTIES OF ANY KIND, BOTH EXPRESS AND IMPLIED, INCLUDING,
 WITHOUT LIMITATION, ANY WARRANTIES OF TITLE, NON-INFRINGEMENT,
 MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. YOU ARE
 SOLELY RESPONSIBLE FOR DETERMINING THE APPROPRIATENESS OF USING OR
 Oracle UCM V071725 Page 324 of 337
 REDISTRIBUTING THE LLAMA MATERIALS AND ASSUME ANY RISKS ASSOCIATED
 WITH YOUR USE OF THE LLAMA MATERIALS AND ANY OUTPUT AND RESULTS.
4. Limitation of Liability. IN NO EVENT WILL META OR ITS AFFILIATES
 BE LIABLE UNDER ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
 TORT, NEGLIGENCE, PRODUCTS LIABILITY, OR OTHERWISE, ARISING OUT
 OF THIS AGREEMENT, FOR ANY LOST PROFITS OR ANY INDIRECT, SPECIAL,
 CONSEQUENTIAL, INCIDENTAL, EXEMPLARY OR PUNITIVE DAMAGES, EVEN IF
```

```
 META OR ITS AFFILIATES HAVE BEEN ADVISED OF THE POSSIBILITY OF ANY
 OF THE FOREGOING.
5. Intellectual Property.
 a.  No trademark licenses are granted under this Agreement, and
  in connection with the Llama Materials, neither Meta nor Licensee
  may use any name or mark owned by or associated with the other or
  any of its affiliates, except as required for reasonable and
  customary use in describing and redistributing the Llama Materials
  or as set forth in this Section 5(a). Meta hereby grants you a
  license to use “Llama” (the “Mark”) solely as required to comply
  with the last sentence of Section 1.b.i. You will comply with
  Meta’s brand guidelines (currently accessible at
  https://about.meta.com/brand/resources/meta/company-brand/ ).
  All goodwill arising out of your use of the Mark will inure to
  the benefit of Meta.
 b.  Subject to Meta’s ownership of Llama Materials and derivatives
  made by or for Meta, with respect to any derivative works and
  modifications of the Llama Materials that are made by you, as
  between you and Meta, you are and will be the owner of such
  derivative works and modifications.
 c.  If you institute litigation or other proceedings against
  Meta or any entity (including a cross-claim or counterclaim
  in a lawsuit) alleging that the Llama Materials or Llama 3.2
  outputs or results, or any portion of any of the foregoing,
  constitutes infringement of intellectual property or other
  rights owned or licensable by you, then any licenses granted
  to you under this Agreement shall terminate as of the date
  such litigation or claim is filed or instituted. You will
  indemnify and hold harmless Meta from and against any claim
  by any third party arising out of or related to your use or
  distribution of the Llama Materials.
6. Term and Termination. The term of this Agreement will commence
 upon your acceptance of this Agreement or access to the Llama
 Materials and will continue in full force and effect until
 terminated in accordance with the terms and conditions herein.
 Meta may terminate this Agreement if you are in breach of any
 term or condition of this Agreement. Upon termination of this
 Agreement, you shall delete and cease use of the Llama Materials.
 Sections 3, 4 and 7 shall survive the termination of this Agreement.
7. Governing Law and Jurisdiction. This Agreement will be governed
 and construed under the laws of the State of California without
 regard to choice of law principles, and the UN Convention on
 Contracts for the International Sale of Goods does not apply
 to this Agreement. The courts of California shall have exclusive
 jurisdiction of any dispute arising out of this Agreement.

Llama 3.2 Acceptable Use Policy

Meta is committed to promoting safe and fair use of its tools
and features, including Llama 3.2. If you access or use Llama 3.2,
you agree to this Acceptable Use Policy (“Policy”).
The most recent copy of this policy can be found at
https://www.llama.com/llama3_2/use-policy.

Prohibited Uses

We want everyone to use Llama 3.2 safely and responsibly.
You agree you will not use, or allow others to use, Llama 3.2 to:
1. Violate the law or others’ rights, including to:
 i.  Engage in, promote, generate, contribute to, encourage,
  plan, incite, or further illegal or unlawful activity or
  content, such as:
  a.  Violence or terrorism
  b.  Exploitation or harm to children, including the solicitation,
   creation, acquisition, or dissemination of child exploitative
   content or failure to report Child Sexual Abuse Material
  c. Human trafficking, exploitation, and sexual violence
```

```
  d. The illegal distribution of information or materials to minors,
   including obscene materials, or failure to employ legally
   required age-gating in connection with such information
   or materials.
  e. Sexual solicitation
  f. Any other criminal activity
 ii. Engage in, promote, incite, or facilitate the harassment,
  abuse, threatening, or bullying of individuals or groups of
  individuals
 iii.Engage in, promote, incite, or facilitate discrimination or other
  unlawful or harmful conduct in the provision of employment,
  employment benefits, credit, housing, other economic benefits,
  or other essential goods and services
 iv. Engage in the unauthorized or unlicensed practice of any
  profession including, but not limited to, financial, legal,
  medical/health, or related professional practices
 v. Collect, process, disclose, generate, or infer private
  or sensitive information about individuals, including
  information about individuals' identity, health, or
  demographic information, unless you have obtained the
  right to do so in accordance with applicable law
 vi. Engage in or facilitate any action or generate any content
  that infringes, misappropriates, or otherwise violates any
  third-party rights, including the outputs or results of any
  products or services using the Llama Materials
 vii.Create, generate, or facilitate the creation of malicious code,
  malware, computer viruses or do anything else that could disable,
  overburden, interfere with or impair the proper working, integrity,
  operation or appearance of a website or computer system
 viii. Engage in any action, or facilitate any action, to
  intentionally circumvent or remove usage restrictions
  or other safety measures, or to enable functionality
  disabled by Meta
2.  Engage in, promote, incite, facilitate, or assist in the planning
 or development of activities that present a risk of death or bodily
 harm to individuals, including use of Llama 3.2 related to the following:
 8. Military, warfare, nuclear industries or applications, espionage, use
 for materials or activities that are subject to the International
 Traffic Arms Regulations (ITAR) maintained by the United States
 Department of State or to the U.S. Biological Weapons Anti-Terrorism
 Act of 1989 or the Chemical Weapons Convention Implementation Act of 1997
 9. Guns and illegal weapons (including weapon development) 10. Illegal
 drugs and regulated/controlled substances 11. Operation of critical
 infrastructure, transportation technologies, or heavy machinery
 12. Self-harm or harm to others, including suicide, cutting, and
 eating disorders 13. Any content intended to incite or promote
 violence, abuse, or any infliction of bodily harm to an individual
3. Intentionally deceive or mislead others, including use of Llama 3.2
 to the following: 14. Generating, promoting, or furthering fraud
 or the creation or promotion of disinformation 15. Generating,
 promoting, or furthering defamatory content, including the creation
 of defamatory statements, images, or other content 16. Generating,
 promoting, or further distributing spam 17. Impersonating another
 individual without consent, authorization, or legal right
 18. Representing that the use of Llama 3.2 or outputs are human-generated
 19. Generating or facilitating false online engagement,
 including fake reviews and other means of fake online engagement
4. Fail to appropriately disclose to end users any known dangers of
your AI system
5. Interact with third party tools, models, or software designed to
 generate unlawful content or engage in unlawful or harmful conduct
 and/or represent that the outputs of such tools, models, or
 software are associated with Meta or Llama 3.2

With respect to any multimodal models included in Llama 3.2,
the rights granted under Section 1(a) of the Llama 3.2 Community
License Agreement are not being granted to you if you are an
```

```
individual domiciled in, or a company with a principal place of
business in, the European Union. This restriction does not apply
to end users of a product or service that incorporates any such
multimodal models.
Please report any violation of this Policy, software “bug,”
or other problems that could lead to a violation of this Policy
through one of the following means:
 -  Reporting issues with the model:
  https://github.com/meta-llama/llama-models/issues
 - Reporting risky content generated by the model:
  http://developers.facebook.com/llama_output_feedback
 - Reporting bugs and security concerns: http://facebook.com/whitehat/info
 - Reporting violations of the Acceptable Use Policy or unlicensed
  uses of Llama 3.2: mailto:LlamaUseReport@meta.com
```

```
================================================================================
================================================================================
```

llama-cpp-python

```
Copyright (c) 2023 Andrei Betlen
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

4th Party dependencies
----------------------

diskcache
---------
Copyright 2016-2023 Grant Jenks
Licensed under the Apache License, Version 2.0 (the “License”);
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing,
software distributed under the License is distributed on an
“AS IS” BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND,
either express or implied. See the License for the specific
language governing permissions and limitations under the License.
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

jinja2
------
Copyright 2007 Pallets
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
1.  Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
2.  Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
```

```
    documentation and/or other materials provided with the distribution.
3.  Neither the name of the copyright holder nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

numpy
-----
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

typing-extensions
-----------------
Python Software Foundation license, version 2
A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section

ZERO-CLAUSE BSD LICENSE FOR CODE IN THE PYTHON DOCUMENTATION
----------------------------------------------------------------------
Permission to use, copy, modify, and/or distribute this software for any
purpose with or without fee is hereby granted.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH
REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT,
INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM
LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR
OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE.
```

==========

==========

multilingual-e5-small

```
 Copyright (c) Microsoft Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
```

```
================================================================================
================================================================================
```

Natural Language Toolkit (NLTK)

```
 # Natural Language Toolkit: Transformation-based learning
#
# Copyright (C) 2001-2024 NLTK Project
# Author: Marcus Uneson <marcus.uneson@gmail.com>
#   based on previous (nltk2) version by
#   Christopher Maloof, Edward Loper, Steven Bird
# URL: <https://www.nltk.org/>

License:
                                Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
------------------
Authors
# Natural Language Toolkit (NLTK) Authors
## Original Authors
- Steven Bird <stevenbird1@gmail.com>
- Edward Loper <edloper@gmail.com>
- Ewan Klein <ewan@inf.ed.ac.uk>
## Contributors
- Tom Aarsen
- Rami Al-Rfou'
- Mark Amery
- Greg Aumann
- Ivan Barria
- Ingolf Becker
- Yonatan Becker
- Paul Bedaride
- Steven Bethard
- Robert Berwick
- Dan Blanchard
- Nathan Bodenstab
- Alexander Böhm
- Francis Bond
- Paul Bone
```

```
- Jordan Boyd-Graber
- Daniel Blanchard
- Phil Blunsom
- Lars Buitinck
- Cristian Capdevila
- Steve Cassidy
- Chen-Fu Chiang
- Dmitry Chichkov
- Jinyoung Choi
- Andrew Clausen
- Lucas Champollion
- Graham Christensen
- Trevor Cohn
- David Coles
- Tom Conroy <https://github.com/tconroy>
- Claude Coulombe
- Lucas Cooper
- Robin Cooper
- Chris Crowner
- James Curran
- Arthur Darcet
- Dariel Dato-on
- Selina Dennis
- Leon Derczynski
- Alexis Dimitriadis
- Nikhil Dinesh
- Liang Dong
- David Doukhan
- Rebecca Dridan
- Pablo Duboue
- Long Duong
- Christian Federmann
- Campion Fellin
- Michelle Fullwood
- Dan Garrette
- Maciej Gawinecki
- Jean Mark Gawron
- Sumukh Ghodke
- Yoav Goldberg
- Michael Wayne Goodman
- Dougal Graham
- Brent Gray
- Simon Greenhill
- Clark Grubb
- Eduardo Pereira Habkost
- Masato Hagiwara
- Lauri Hallila
- Michael Hansen
- Yurie Hara
- Will Hardy
- Tyler Hartley
- Peter Hawkins
- Saimadhav Heblikar
- Fredrik Hedman
- Helder
- Michael Heilman
- Ofer Helman
- Christopher Hench
- Bruce Hill
- Amy Holland
- Kristy Hollingshead
- Marcus Huderle
- Baden Hughes
- Nancy Ide
- Rebecca Ingram
- Edward Ivanovic
- Thomas Jakobsen
```

```
- Nick Johnson
- Eric Kafe
- Piotr Kasprzyk
- Angelos Katharopoulos
- Sudharshan Kaushik
- Chris Koenig
- Mikhail Korobov
- Denis Krusko
- Ilia Kurenkov
- Stefano Lattarini
- Pierre-François Laquerre
- Stefano Lattarini
- Haejoong Lee
- Jackson Lee
- Max Leonov
- Chris Liechti
- Hyuckin David Lim
- Tom Lippincott
- Peter Ljunglöf
- Alex Louden
- David Lukeš
- Joseph Lynch
- Nitin Madnani
- Felipe Madrigal
- Bjørn Mæland
- Dean Malmgren
- Christopher Maloof
- Rob Malouf
- Iker Manterola
- Carl de Marcken
- Mitch Marcus
- Torsten Marek
- Robert Marshall
- Marius Mather
- Duncan McGreggor
- David McClosky
- Xinfan Meng
- Dmitrijs Milajevs
- Matt Miller
- Margaret Mitchell
- Tomonori Nagano
- Jason Narad
- Shari A’aidil Nasruddin
- Lance Nathan
- Morten Neergaard
- David Nemeskey
- Eric Nichols
- Joel Nothman
- Alireza Nourian
- Alexander Oleynikov
- Pierpaolo Pantone
- Ted Pedersen
- Jacob Perkins
- Alberto Planas
- Ondrej Platek
- Alessandro Presta
- Qi Liu
- Martin Thorsen Ranang
- Michael Recachinas
- Brandon Rhodes
- Joshua Ritterman
- Will Roberts
- Stuart Robinson
- Carlos Rodriguez
- Lorenzo Rubio
- Alex Rudnick
- Jussi Salmela
```

```
- Geoffrey Sampson
- Kepa Sarasola
- Kevin Scannell
- Nathan Schneider
- Rico Sennrich
- Thomas Skardal
- Eric Smith
- Lynn Soe
- Rob Speer
- Peter Spiller
- Richard Sproat
- Ceri Stagg
- Peter Stahl
- Oliver Steele
- Thomas Stieglmaier
- Jan Strunk
- Liling Tan
- Claire Taylor
- Louis Tiao
- Steven Tomcavage
- Tiago Tresoldi
- Marcus Uneson
- Yu Usami
- Petro Verkhogliad
- Peter Wang
- Zhe Wang
- Charlotte Wilson
- Chuck Wooters
- Steven Xu
- Beracah Yankama
- Lei Ye (叶磊)
- Patrick Ye
- Geraldine Sim Wei Ying
- Jason Yoder
- Thomas Zieglier
- 0ssifrage
- ducki13
- kiwipi
- lade
- isnowfy
- onesandzeros
- pquentin
- wvanlint
- Álvaro Justen <https://github.com/turicas>
- bjut-hz
- Sergio Oller
- Izam Mohammed <https://github.com/izam-mohammed>
- Will Monroe
- Elijah Rippeth
- Emil Manukyan
- Casper Lehmann-Strøm
- Andrew Giel
- Tanin Na Nakorn
- Linghao Zhang
- Colin Carroll
- Heguang Miao
- Hannah Aizenman (story645)
- George Berry
- Adam Nelson
- J Richard Snape
- Alex Constantin <alex@keyworder.ch>
- Tsolak Ghukasyan
- Prasasto Adi
- Safwan Kamarrudin
- Arthur Tilley
- Vilhjalmur Thorsteinsson
- Jaehoon Hwang <https://github.com/jaehoonhwang>
```

- Chintan Shah <https://github.com/chintanshah24>
- sbagan
- Zicheng Xu
- Albert Au Yeung <https://github.com/albertauyeung>
- Shenjian Zhao
- Deng Wang <https://github.com/lmatt-bit>
- Ali Abdullah
- Stoytcho Stoytchev
- Lakhdar Benzahia
- Kheireddine Abainia <https://github.com/xprogramer>
- Yibin Lin <https://github.com/yibinlin>
- Artiem Krinitsyn
- Björn Mattsson
- Oleg Chislov
- Pavan Gururaj Joshi <https://github.com/PavanGJ>
- Ethan Hill <https://github.com/hill1303>
- Vivek Lakshmanan
- Somnath Rakshit <https://github.com/somnathrakshit>
- Anlan Du
- Pulkit Maloo <https://github.com/pulkitmaloo>
- Brandon M. Burroughs <https://github.com/brandonmburroughs>
- John Stewart <https://github.com/free-variation>
- Iaroslav Tymchenko <https://github.com/myproblemchild>
- Aleš Tamchyna
- Tim Gianitsos <https://github.com/timgianitsos>
- Philippe Partarrieu <https://github.com/ppartarr>
- Andrew Owen Martin
- Adrian Ellis <https://github.com/adrianjellis>
- Nat Quayle Nelson <https://github.com/nqnstudios>
- Yanpeng Zhao <https://github.com/zhaoyanpeng>
- Matan Rak <https://github.com/matanrak>
- Nick Ulle <https://github.com/nick-ulle>
- Uday Krishna <https://github.com/udaykrishna>
- Osman Zubair <https://github.com/okz12>
- Viresh Gupta <https://github.com/virresh>
- Ondřej Cífka <https://github.com/cifkao>
- Iris X. Zhou <https://github.com/irisxzhou>
- Devashish Lal <https://github.com/BLaZeKiLL>
- Gerhard Kremer <https://github.com/GerhardKa>
- Nicolas Darr <https://github.com/ndarr>
- Hervé Nicol <https://github.com/hervenicol>
- Alexandre H. T. Dias <https://github.com/alexandredias3d>
- Daksh Shah <https://github.com/Daksh>
- Jacob Weightman <https://github.com/jacobdweightman>
- Bonifacio de Oliveira <https://github.com/Bonifacio2>
- Armins Bagrats Stepanjans <https://github.com/ab-10>
- Vassilis Palassopoulos <https://github.com/palasso>
- Ram Rachum <https://github.com/cool-RR>
- Or Sharir <https://github.com/orsharir>
- Denali Molitor <https://github.com/dmmolitor>
- Jacob Moorman <https://github.com/jdmoorman>
- Cory Nezin <https://github.com/corynezin>
- Matt Chaput
- Danny Sepler <https://github.com/dannysepler>
- Akshita Bhagia <https://github.com/AkshitaB>
- Pratap Yadav <https://github.com/prtpydv>
- Hiroki Teranishi <https://github.com/chantera>
- Ruben Cartuyvels <https://github.com/rubencart>
- Dalton Pearson <https://github.com/daltonpearson>
- Robby Horvath <https://github.com/robbyhorvath>
- Gavish Poddar <https://github.com/gavishpoddar>
- Saibo Geng <https://github.com/Saibo-creator>
- Ahmet Yildirim <https://github.com/RnDevelover>
- Yuta Nakamura <https://github.com/yutanakamura-tky>
- Adam Hawley <https://github.com/adamjhawley>
- Panagiotis Simakis <https://github.com/sp1thas>
- Richard Wang <https://github.com/richarddwang>

```
- Alexandre Perez-Lebel <https://github.com/aperezlebel>
- Fernando Carranza <https://github.com/fernandocar86>
- Martin Kondratzky <https://github.com/martinkondra>
- Heungson Lee <https://github.com/heungson>
- M.K. Pawelkiewicz <https://github.com/hamiltonianflow>
- Steven Thomas Smith <https://github.com/essandess>
- Jan Lennartz <https://github.com/Madnex>
- Tim Sockel <https://github.com/TiMauzi>
- Akihiro Yamazaki <https://github.com/zakkie>
- Ron Urbach <https://github.com/sharpblade4>
- Vivek Kalyan <https://github.com/vivekkalyan>
- Tom Strange https://github.com/strangetom
## Others whose work we've taken and included in NLTK, but who didn't directly contribute it:
### Contributors to the Porter Stemmer
- Martin Porter
- Vivake Gupta
- Barry Wilkins
- Hiranmay Ghosh
- Chris Emerson
### Authors of snowball arabic stemmer algorithm
- Assem Chelli
- Abdelkrim Aries
- Lakhdar Benzahia

4th Party Dependencies
----------------------

click
-----
Copyright 2014 Pallets
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
1.  Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
2.  Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
    documentation and/or other materials provided with the distribution.
3.  Neither the name of the copyright holder nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

joblib
------
Copyright (c) 2008-2021, The joblib developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
```

```
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

regex
-----
Copyright 2020 Matthew Barnett
license_type: Apache Software License 2.0

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

tqdm
----
Copyright (c) 2013 noamraph

`tqdm` is a product of collaborative work.
Unless otherwise stated, all authors (see commit logs) retain copyright
for their respective work, and release the work under the MIT licence
(text below).
Exceptions or notable authors are listed below
in reverse chronological order:
* files: *
  MPLv2.0 2015-2021 (c) Casper da Costa-Luis
  [casperdcl](https://github.com/casperdcl).
* files: tqdm/_tqdm.py
  MIT 2016 (c) [PR #96] on behalf of Google Inc.
* files: tqdm/_tqdm.py setup.py README.rst MANIFEST.in .gitignore
  MIT 2013 (c) Noam Yorav-Raphael, original author.

A copy of the Mozilla Public License 2.0  license can be found
in the 'Standard Licenses' section

Copyright (c) 2013 noamraph
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
```

```
================================================================================
================================================================================
```

Numpy

```
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
```

```
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This binary distribution of NumPy also bundles the following software:

Name: OpenBLAS
Files: extra-dll\libopenb*.dll
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: extra-dll\libopenb*.dll
Description: bundled in OpenBLAS
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
```

```
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSES_bundled.txt
--------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt

--------------- RECURSIVE LICENSE Mentioned in  LICENSES_bundled.txt --------------------
lapack-lite
Copyright (c) 1992-2022 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2022 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2022 The University of Colorado Denver.  All rights
                        reserved.
Additional copyrights may follow
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
```

```
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

dragon4
  Copyright (c) 2022 Ryan Juckett
  Permission is hereby granted, free of charge, to any person obtaining a copy
  of this software and associated documentation files (the "Software"), to
  deal in the Software without restriction, including without limitation the
  rights to use, copy, modify, merge, publish, distribute, sublicense, andor
  sell copies of the Software, and to permit persons to whom the Software is
  furnished to do so, subject to the following conditions:
  The above copyright notice and this permission notice shall be included in
  all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
  IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
  FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
  AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
  LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
  FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
  IN THE SOFTWARE.

libdivide
  Copyright (C) 2010 - 2022 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2022 Kim Walisch, <kim.walisch@gmail.com>
  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.
  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:
  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.

LICENSES_bundled in different directories:
-----------------------------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: SPLITMIX64
```

```
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: Sebastiano Vigna © 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md

Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
License: MIT
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md

Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: D. E. Shaw Research
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md

Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md

Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md

Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: Jeff Bezanson, Stefan Karpinski, Viral B. Shah, and other contributors
For license text, see/numpy/blob/numpy/random/src/distributions/LICENSE.md

Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA
Open Source License (NCSA) and The 3-Clause BSD License
For license text, see/numpy/blob/numpy/random/LICENSE.md

Name: numpy.core.ma
Files: /numpy/blob/numpy/ma/*
License: University of Georgia and Pierre G.F. Gerard-Marchant
For license text, see /numpy/blob/numpy/ma/LICENSE

RECURSIVE LICENSE Mentioned in  LICENSES_bundled in different directories
(list above) --------------------

Name: SPLITMIX64
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all copyright
and related and neighboring rights to this software to the public domain
worldwide. This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.

Name: SFC64
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
```

```
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: PHILOX
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
   - Redistributions of source code must retain the above copyright
   notice, this list of conditions, and the following disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions, and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
    - Neither the name of D. E. Shaw Research nor the names of its
    contributors may be used to endorse or promote products derived
    from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: PCG64
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.

Name: MT19937
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the original
design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
   -  Redistributions of source code must retain the above
   copyright notice, this list of conditions and the following
   disclaimer.
   -  Redistributions in binary form must reproduce the above
```

```
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
    - The names of its contributors may not be used to endorse or
    promote products derived from this software without specific
    prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval function
from Richard J. Wagner's implementation of the Mersenne Twister
RNG, optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: Random
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal with the Software without
restriction, including without limitation the rights to use,
```

```
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom
the Software is furnished to do so, subject to the following conditions:
Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimers.
Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimers in
the documentation and/or other materials provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of any contributors
may be used to endorse or promote products derived from this Software
without specific prior written permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE CONTRIBUTORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS WITH THE SOFTWARE.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
    - Redistributions of source code must retain the above
    copyright notice, this list of conditions and the following disclaimer.
    - Redistributions in binary form must reproduce the above
    copyright notice, this list of conditions and the following
    disclaimer in the documentation and/or other materials
    provided with the distribution.
   - Neither the name of the copyright holder nor the names
   of its contributors may be used to endorse or promote products
   derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original sources,
often the algorithm's designer. Component licenses are located with
the component code.

Name: numpy.core.ma
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
```

```
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
================================================================================
================================================================================
```

onnxruntime python

```
Copyright (c) Microsoft Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

4th Party Preferences
---------------------

coloredlogs
-----------
Copyright (c) 2020 Peter Odding
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

humanfriendly
-------------
MIT License
Copyright (c) 2021 Peter Odding
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
```

```
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

flatbuffers
-----------
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

numpy
-----
Copyright (c) 2005-2023, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Bundle
------
Name: OpenBLAS
Files: .libs/libopenb*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
```

```
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: .libs/libopenb*.so
Description: bundled in OpenBLAS
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Bundle
------
Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt
Name: tempita
Files: tools/npy_tempita/*
License: MIT
  For details, see tools/npy_tempita/license.txt
Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
```

```
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c
Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt

lapack-lite
---------
Copyright (c) 1992-2022 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2022 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2022 The University of Colorado Denver.  All rights
                        reserved.
Additional copyrights may follow
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

tempita
--------
Copyright (c) 2022 Ian Bicking and Contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
```

```
dragon4
--------
  Copyright (c) 2022 Ryan Juckett
  Permission is hereby granted, free of charge, to any person obtaining a copy
  of this software and associated documentation files (the "Software"), to
  deal in the Software without restriction, including without limitation the
  rights to use, copy, modify, merge, publish, distribute, sublicense, andor
  sell copies of the Software, and to permit persons to whom the Software is
  furnished to do so, subject to the following conditions:
  The above copyright notice and this permission notice shall be included in
  all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
  IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
  FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
  AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
  LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
  FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
  IN THE SOFTWARE.

libdivide
----------
  Copyright (C) 2010 - 2022 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2022 Kim Walisch, <kim.walisch@gmail.com>
  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.
  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:
  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.

Bundle
------
Name: SPLITMIX64
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: Sebastiano Vigna © 2005–2019 NumPy Developers,
Licensed under the 3-clause BSD License.
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md
Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
License: MIT
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md
Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: D. E. Shaw Research
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md
Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md
Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md
Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: Jeff Bezanson, Stefan Karpinski, Viral B. Shah, and other contributors
For license text, see/numpy/blob/numpy/random/src/distributions/LICENSE.md
Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA
```

```
Open Source License (NCSA) and The 3-Clause BSD License
For license text, see/numpy/blob/numpy/random/LICENSE.md
Name: nympy.core.ma
Files: /numpy/blob/numpy/ma/*
License: University of Georgia and Pierre G.F. Gerard-Marchant
For license text, see /numpy/blob/numpy/ma/LICENSE

Name: SPLITMIX64
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all copyright
and related and neighboring rights to this software to the public domain
worldwide. This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.

Name: SFC64
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: PHILOX
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
   - Redistributions of source code must retain the above copyright
   notice, this list of conditions, and the following disclaimer.
   -  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions, and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
    - Neither the name of D. E. Shaw Research nor the names of its
    contributors may be used to endorse or promote products derived
    from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY
OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF
THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

Name: PCG64
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
```

```
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: MT19937
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the original
design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
   -  Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
    - The names of its contributors may not be used to endorse or
    promote products derived from this software without specific
    prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval
function from Richard J. Wagner's implementation of the
Mersenne Twister RNG, optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
The ziggurat methods were derived from Julia.
```

```
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Random
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal with the Software without restriction, including without
limitation the rights to use, copy, modify, merge, publish, distribute,
sublicense, and/or sell copies of the Software, and to permit persons
to whom the Software is furnished to do so, subject to the following conditions:
Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimers.
Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimers in the documentation
and/or other materials provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of any contributors
may be used to endorse or promote products derived from this Software
without specific prior written permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH
THE SOFTWARE.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
    - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
    documentation and/or other materials provided with the distribution.
   - Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
```

```
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original sources,
often the algorithm's designer. Component licenses are located with
the component code.

Name: nympy.core.ma
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following conditions are met:

     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

packaging
---------
This software is made available under the terms of *either* of the licenses
found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made
under the terms of *both* these licenses.
Copyright (c) Donald Stufft and individual contributors.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

APACHE LICENSE
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

protobuf
```

```
--------
Copyright 2008 Google Inc.  All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
    * Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code generated by the Protocol Buffer compiler is owned by the owner
of the input file used when generating it.  This code is not
standalone and requires a support library to be linked with it.  This
support library is itself covered by the above license.

sympy
-----
Copyright (c) 2006-2023 SymPy Development Team
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of SymPy nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
Copyright (c) 2006-2018 SymPy Development Team,
              2013-2023 Sergey B Kirpichev
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of Diofant or SymPy nor the names of its contributors
```

```
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
Copyright (c) 2014 Matthew Rocklin
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of multipledispatch nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
Copyright (c) 2009-2023, PyDy Authors
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in the
  documentation and/or other materials provided with the distribution.
* Neither the name of this project nor the names of its contributors may be
  used to endorse or promote products derived from this software without
  specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL PYDY AUTHORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Copyright 2016, latex2sympy
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
```

```
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

mpmath
------
Copyright (c) 2005-2023 Fredrik Johansson and mpmath contributors
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of the copyright holder nor the names of its
     contributors may be used to endorse or promote products derived
     from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
```

==========
==========

Oracle OCI Python SDK

```
The Universal Permissive License (UPL), Version 1.0

Subject to the condition set forth below, permission is hereby granted to
any person obtaining a copy of this software, associated documentation
and/or data (collectively the "Software"), free of charge and under any
and all copyright rights in the Software, and any and all patent rights
owned or freely licensable by each licensor hereunder covering either
(i) the unmodified Software as contributed to or provided by such licensor,
or (ii) the Larger Works (as defined below), to deal in both
(a) the Software, and
(b) any piece of software and/or hardware listed in the lrgrwrks.txt
file if one is included with the Software (each a "Larger Work" to
which the Software is contributed by such licensors),
without restriction, including without limitation the rights to copy,
create derivative works of, display, perform, and distribute the
Software and make, use, sell, offer for sale, import, export, have made,
and have sold the Software and the Larger Work(s), and to sublicense the
foregoing rights on either these or other terms.
This license is subject to the following condition:
The above copyright notice and either this complete permission notice or
at a minimum a reference to the UPL must be included in all copies or
substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF
```

```
OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The Apache Software License, Version 2.0
Copyright (c) 2016, 2018, Oracle and/or its affiliates.  All rights reserved.
Licensed under the Apache License, Version 2.0 (the "License"); You may not
use this product except in compliance with the License.
You may obtain a copy of the License at http://www.apache.org/licenses/LICENSE-2.0.
A copy of the license is also reproduced below.
Unless required by applicable law or agreed to in writing, software distributed
under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR
CONDITIONS OF ANY KIND, either express or implied.  See the License for the
specific language governing permissions and  limitations under the License.
Apache License
Version 2.0, January 2004
http://www.apache.org/licenses/
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


4th Party References
--------------------

certifi
* Copyright 2022, Kenneth Reitz
* License: Mozilla Public License 2.0 (MPL 2.0)
* Source code: https://github.com/certifi/python-certifi
* Project home: https://certifi.io

cryptography
* Copyright (c) Individual contributors.
* License: Apache License, BSD License, PSF License
* Source code: https://github.com/pyca/cryptography
* Project home: https://github.com/pyca/cryptography

pyOpenSSL
* Copyright 2001 The pyOpenSSL developers
* License: Apache License 2.0
* Source code: https://github.com/pyca/pyopenssl
* Project home: https://www.pyopenssl.org/

python-dateutil
* Copyright 2017- Paul Ganssle <paul@ganssle.io> 2017- dateutil contributors
(see AUTHORS file)
* License: Apache License 2.0
* Source code: https://github.com/dateutil/dateutil
* Project home: https://dateutil.readthedocs.io/

pytz
* Copyright (c) 2003-2019 Stuart Bishop <stuart@stuartbishop.net>
* License: The MIT License (MIT)
* Source code: https://github.com/stub42/pytz
* Project home: https://pythonhosted.org/pytz

six
* Copyright (c) 2010-2020 Benjamin Peterson
* License: The MIT License (MIT)
* Source code: https://github.com/benjaminp/six
* Project home: https://github.com/benjaminp/six

vendorize
* Copyright (c) 2015, Michael Williamson All rights reserved
* License: BSD 2-Clause "Simplified" License
* Source code: https://github.com/mwilliamson/python-vendorize
* Project home: https://github.com/mwilliamson/python-vendorize

chardet
* Copyright 2015, Mark Pilgrim, Dan Blanchard, Ian Cordasco
```

```
* License: GNU Lesser General Public License v2.1
* Source code: https://github.com/chardet/chardet
* Project home: https://github.com/chardet/chardet

httpsig_cffi
* Copyright (c) 2014 Adam Knight 2012 Adam T. Lindsay (original author)
* License: The MIT License (MIT)
* Source code: https://github.com/hawkowl/httpsig_cffi
* Project home: https://github.com/hawkowl/httpsig_cffi

idna
* Copyright (c) 2013-2021, Kim Davies All rights reserved
* License: BSD 3-Clause "New" or "Revised" License
* Source code: https://github.com/kjd/idna
* Project home: https://github.com/kjd/idna

jwt
* Copyright 2017 Gehirn Inc
* License: Apache License 2.0
* Source code: https://github.com/GehirnInc/python-jwt
* Project home: https://github.com/GehirnInc/python-jwt

requests
* Copyright 2019 Kenneth Reitz
* License: Apache License 2.0
* Source code: https://github.com/psf/requests
* Project home: https://requests.readthedocs.io

urllib3
* Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)
* License: MIT License
* Source code: https://github.com/urllib3/urllib3
* Project home: https://urllib3.readthedocs.io

circuitbreaker
* Copyright (c) 2016-2020, Fabian Fuelling opensource@fabfuel.de. All rights reserved.
* License: BSD-3-Clause New License
* Source code: https://github.com/fabfuel/circuitbreaker
* Project home: https://pypi.org/project/circuitbreaker

pycparser
* Copyright (c) 2008-2020, Eli Bendersky All rights reserved.
* License: BSD-3-Clause New License
* Source code: https://github.com/eliben/pycparser
* Project home: https://pypi.org/project/pycparser

cffi
* Copyright (C) 2005-2007, James Bielman  <jamesjb@jamesjb.com>
* License: The MIT License
* Source code: https://pypi.org/project/cffi/#files
* Project home: https://cffi.readthedocs.io/en/latest

sseclient
* Copyright 2024 Maxime Petazzoni maxime.petazzoni@bulix.org
* License: Apache License 2.0
* Source code: https://github.com/mpetazzoni/sseclient
* Project home: https://github.com/mpetazzoni/sseclient

openssl
* Copyright (c) 1998-2023 The OpenSSL Project Authors
* Copyright (c) 1995-1998 Eric A. Young, Tim J. Hudson
* License: Apache License 2.0, OpenSSL License, Original SSLeay License
* Source code: https://github.com/openssl/openssl
* Project home: https://www.openssl.org/

libffi
* Copyright (c) 1996-2024  Anthony Green, Red Hat, Inc and others.
```

```
* License: The MIT License
* Source code: https://github.com/libffi/libffi
* Project home: https://github.com/libffi/libffi

============================== Licenses ==============================

---------------------------- MIT License ----------------------------

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.
------------------------------------------------------------------------

-------------------------- Apache License 2.0 --------------------------

                              Apache License
                        Version 2.0, January 2004
                     http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

--------------------- BSD 2-Clause "Simplified" License ----------------
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
      copyright notice, this list of conditions and the following
      disclaimer in the documentation and/or other materials provided
      with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----------------------- BSD-3-Clause New License ---------------------
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright notice,
       this list of conditions and the following disclaimer in the documentation
       and/or other materials provided with the distribution.
    3. Neither the name of the copyright holder nor the names of its contributors
```

```
       may be used to endorse or promote products derived from this software without
       specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT
SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE,
EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---------------------- Mozilla Public License -------------------------
Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov  3 19:04:19 2011#
This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt).  This file can be found in the mozilla source tree:
https://hg.mozilla.org/mozilla-central/file/tip/security/nss/lib/ckfw/builtins/certdata.txt
It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php_curl, or with
an Apache+mod_ssl webserver for SSL client authentication.
Just configure this file as the SSLCACertificateFile.#

***** BEGIN LICENSE BLOCK *****
This Source Code Form is subject to the terms of the Mozilla Public License,
v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain
one at http://mozilla.org/MPL/2.0/.

***** END LICENSE BLOCK *****
@(#) $RCSfile: certdata.txt,v $ $Revision: 1.80 $ $Date: 2011/11/03 15:11:58 $
Mozilla Public License
Version 2.0
A copy of the Mozilla Public License 2.0  license can be found
in the 'Standard Licenses' section

------------------- GNU LESSER GENERAL PUBLIC LICENSE ------------------
           GNU LESSER GENERAL PUBLIC LICENSE
         Version 2.1, February 1999

A copy of the GNU Lesser General Public License v2.1, February 1999  license can be found
in the 'Standard Licenses' section

------------------ PYTHON SOFTWARE FOUNDATION LICENSE ------------------
1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and
   the Individual or Organization ("Licensee") accessing and otherwise using Python
   2.7.12 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, PSF hereby
   grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce,
   analyze, test, perform and/or display publicly, prepare derivative works,
   distribute, and otherwise use Python 2.7.12 alone or in any derivative
   version, provided, however, that PSF's License Agreement and PSF's notice of
   copyright, i.e., "Copyright © 2001-2016 Python Software Foundation; All Rights
   Reserved" are retained in Python 2.7.12 alone or in any derivative version
   prepared by Licensee.

3. In the event Licensee prepares a derivative work that is based on or
   incorporates Python 2.7.12 or any part thereof, and wants to make the
   derivative work available to others as provided herein, then Licensee hereby
   agrees to include in any such work a brief summary of the changes made to Python
   2.7.12.

4. PSF is making Python 2.7.12 available to Licensee on an "AS IS" basis.
   PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED.  BY WAY OF
   EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR
```

```
   WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE
   USE OF PYTHON 2.7.12 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 2.7.12
   FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF
   MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 2.7.12, OR ANY DERIVATIVE
   THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of
   its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship
   of agency, partnership, or joint venture between PSF and Licensee.  This License
   Agreement does not grant permission to use PSF trademarks or trade name in a
   trademark sense to endorse or promote products or services of Licensee, or any
   third party.

8. By copying, installing or otherwise using Python 2.7.12, Licensee agrees
   to be bound by the terms and conditions of this License Agreement.
----------------------------------------------------------------------
OpenSSL License
  ---------------
/* ====================================================================
 * Copyright (c) 1998-2019 The OpenSSL Project.  All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 *
 * 1. Redistributions of source code must retain the above copyright
 *    notice, this list of conditions and the following disclaimer.
 *
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in
 *    the documentation and/or other materials provided with the
 *    distribution.
 *
 * 3. All advertising materials mentioning features or use of this
 *    software must display the following acknowledgment:
 *    "This product includes software developed by the OpenSSL Project
 *    for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
 *
 * 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
 *    endorse or promote products derived from this software without
 *    prior written permission. For written permission, please contact
 *    openssl-core@openssl.org.
 *
 * 5. Products derived from this software may not be called "OpenSSL"
 *    nor may "OpenSSL" appear in their names without prior written
 *    permission of the OpenSSL Project.
 *
 * 6. Redistributions of any form whatsoever must retain the following
 *    acknowledgment:
 *    "This product includes software developed by the OpenSSL Project
 *    for use in the OpenSSL Toolkit (http://www.openssl.org/)"
 *
 * THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY
 * EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
 * PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE OpenSSL PROJECT OR
 * ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
 * SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
 * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 * LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
 * STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
 * ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
```

```
 * OF THE POSSIBILITY OF SUCH DAMAGE.
 * ====================================================================
 *
 * This product includes cryptographic software written by Eric Young
 * (eay@cryptsoft.com).  This product includes software written by Tim
 * Hudson (tjh@cryptsoft.com).
 *
 */
 -----------------------------------------------------------------------
 Original SSLeay License
 -----------------------
/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
 * All rights reserved.
 *
 * This package is an SSL implementation written
 * by Eric Young (eay@cryptsoft.com).
 * The implementation was written so as to conform with Netscapes SSL.
 *
 * This library is free for commercial and non-commercial use as long as
 * the following conditions are aheared to.  The following conditions
 * apply to all code found in this distribution, be it the RC4, RSA,
 * lhash, DES, etc., code; not just the SSL code.  The SSL documentation
 * included with this distribution is covered by the same copyright terms
 * except that the holder is Tim Hudson (tjh@cryptsoft.com).
 *
 * Copyright remains Eric Young's, and as such any Copyright notices in
 * the code are not to be removed.
 * If this package is used in a product, Eric Young should be given attribution
 * as the author of the parts of the library used.
 * This can be in the form of a textual message at program startup or
 * in documentation (online or textual) provided with the package.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the copyright
 *    notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in the
 *    documentation and/or other materials provided with the distribution.
 * 3. All advertising materials mentioning features or use of this software
 *    must display the following acknowledgement:
 *    "This product includes cryptographic software written by
 *     Eric Young (eay@cryptsoft.com)"
 *    The word 'cryptographic' can be left out if the rouines from the library
 *    being used are not cryptographic related :-).
 * 4. If you include any Windows specific code (or a derivative thereof) from
 *    the apps directory (application code) you must include an acknowledgement:
 *    "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
 *
 * THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
 * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
 * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
 * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
 * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
 * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
 * SUCH DAMAGE.
 *
 * The licence and distribution terms for any publically available version or
 * derivative of this code cannot be changed.  i.e. this code cannot simply be
 * copied and put under another distribution licence
 * [including the GNU Public Licence.]
 */
```

```
================================================================================
================================================================================
```

orbit-ml

```
Copyright 2020 Uber Technology, Inc.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

4th Party Dependencies
----------------------

arviz
-----
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

cmdstanpy
---------
Copyright (c) 2019, Stan Developers and their Assignees
All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following conditions are met:
Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in
the documentation and/or other materials provided with the distribution.
Neither the name of the copyright holder nor the names of its
contributors may be used to endorse or promote products derived
from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
OF THE POSSIBILITY OF SUCH DAMAGE.

importlib_resources
-------------------
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/
```

```
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

matplotlib
----------
License agreement for matplotlib versions 1.3.0 and later
=========================================================
1. This LICENSE AGREEMENT is between the Matplotlib Development Team
("MDT"), and the Individual or Organization ("Licensee") accessing and
otherwise using matplotlib software in source or binary form and its
associated documentation.
2. Subject to the terms and conditions of this License Agreement, MDT
hereby grants Licensee a nonexclusive, royalty-free, world-wide license
to reproduce, analyze, test, perform and/or display publicly, prepare
derivative works, distribute, and otherwise use matplotlib
alone or in any derivative version, provided, however, that MDT's
License Agreement and MDT's notice of copyright, i.e., "Copyright (c)
2012- Matplotlib Development Team; All Rights Reserved" are retained in
matplotlib  alone or in any derivative version prepared by
Licensee.
3. In the event Licensee prepares a derivative work that is based on or
incorporates matplotlib or any part thereof, and wants to
make the derivative work available to others as provided herein, then
Licensee hereby agrees to include in any such work a brief summary of
the changes made to matplotlib .
4. MDT is making matplotlib available to Licensee on an "AS
IS" basis.  MDT MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, MDT MAKES NO AND
DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF MATPLOTLIB
WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. MDT SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF MATPLOTLIB
 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR
LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING
MATPLOTLIB , OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF
THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material
breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any
relationship of agency, partnership, or joint venture between MDT and
Licensee.  This License Agreement does not grant permission to use MDT
trademarks or trade name in a trademark sense to endorse or promote
products or services of Licensee, or any third party.
8. By copying, installing or otherwise using matplotlib ,
Licensee agrees to be bound by the terms and conditions of this License
Agreement.

License agreement for matplotlib versions prior to 1.3.0
========================================================
1. This LICENSE AGREEMENT is between John D. Hunter ("JDH"), and the
Individual or Organization ("Licensee") accessing and otherwise using
matplotlib software in source or binary form and its associated
documentation.
2. Subject to the terms and conditions of this License Agreement, JDH
hereby grants Licensee a nonexclusive, royalty-free, world-wide license
to reproduce, analyze, test, perform and/or display publicly, prepare
derivative works, distribute, and otherwise use matplotlib
alone or in any derivative version, provided, however, that JDH's
License Agreement and JDH's notice of copyright, i.e., "Copyright (c)
2002-2011 John D. Hunter; All Rights Reserved" are retained in
matplotlib  alone or in any derivative version prepared by
Licensee.
3. In the event Licensee prepares a derivative work that is based on or
incorporates matplotlib  or any part thereof, and wants to
make the derivative work available to others as provided herein, then
Licensee hereby agrees to include in any such work a brief summary of
```

```
the changes made to matplotlib.
4. JDH is making matplotlib  available to Licensee on an "AS
IS" basis.  JDH MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, JDH MAKES NO AND
DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF MATPLOTLIB
WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. JDH SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF MATPLOTLIB
 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR
LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING
MATPLOTLIB , OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF
THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material
breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any
relationship of agency, partnership, or joint venture between JDH and
Licensee.  This License Agreement does not grant permission to use JDH
trademarks or trade name in a trademark sense to endorse or promote
products or services of Licensee, or any third party.
8. By copying, installing or otherwise using matplotlib,
Licensee agrees to be bound by the terms and conditions of this License
Agreement.

numpy
-----
Copyright (c) 2005-2025, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


pandas
------
Copyright (c) 2008-2011, AQR Capital Management, LLC, Lambda Foundry, Inc.
and PyData Development Team
All rights reserved.
Copyright (c) 2011-2025, Open source contributors.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
```

```
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


pyro-ppl
--------
                           Apache License
                     Version 2.0, January 2004
                  http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

scipy
-----
Copyright (c) 2001-2002 Enthought, Inc. 2003, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

seaborn
-------
Copyright (c) 2012-2023, Michael L. Waskom All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
Neither the name of the project nor the names of its contributors may be
used to endorse or promote products derived from this software without
specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
```

```
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

statsmodels
-----------
Copyright (C) 2006, Jonathan E. Taylor
All rights reserved.
Copyright (c) 2006-2008 Scipy Developers.
All rights reserved.
Copyright (c) 2009-2018 statsmodels Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of statsmodels nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL STATSMODELS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

pytorch
-------
From PyTorch:
Copyright (c) 2016-     Facebook, Inc            (Adam Paszke)
Copyright (c) 2014-     Facebook, Inc            (Soumith Chintala)
Copyright (c) 2011-2014 Idiap Research Institute (Ronan Collobert)
Copyright (c) 2012-2014 Deepmind Technologies    (Koray Kavukcuoglu)
Copyright (c) 2011-2012 NEC Laboratories America (Koray Kavukcuoglu)
Copyright (c) 2011-2013 NYU                      (Clement Farabet)
Copyright (c) 2006-2010 NEC Laboratories America (Ronan Collobert, Leon Bottou, Iain Melvin, Jason Weston)
Copyright (c) 2006      Idiap Research Institute (Samy Bengio)
Copyright (c) 2001-2004 Idiap Research Institute (Ronan Collobert, Samy Bengio, Johnny Mariethoz)
From Caffe2:
Copyright (c) 2016-present, Facebook Inc. All rights reserved.
All contributions by Facebook:
Copyright (c) 2016 Facebook Inc.
All contributions by Google:
Copyright (c) 2015 Google Inc.
All rights reserved.
All contributions by Yangqing Jia:
Copyright (c) 2015 Yangqing Jia
All rights reserved.
All contributions by Kakao Brain:
Copyright 2019-2020 Kakao Brain
All contributions by Cruise LLC:
Copyright (c) 2022 Cruise LLC.
All rights reserved.
All contributions by Tri Dao:
```

```
Copyright (c) 2024 Tri Dao.
All rights reserved.
All contributions by Arm:
Copyright (c) 2021, 2023-2024 Arm Limited and/or its affiliates
All contributions from Caffe:
Copyright(c) 2013, 2014, 2015, the respective contributors
All rights reserved.
All other contributions:
Copyright(c) 2015, 2016 the respective contributors
All rights reserved.
Caffe2 uses a copyright model similar to Caffe: each contributor holds
copyright over their contributions to Caffe2. The project versioning records
all such contribution and copyright details. If a contributor wants to further
mark their specific copyright on a particular contribution, they should
indicate their copyright solely in the commit message of the change when it is
committed.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. Neither the names of Facebook, Deepmind Technologies, NYU, NEC Laboratories America
   and IDIAP Research Institute nor the names of its contributors may be
   used to endorse or promote products derived from this software without
   specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

tqdm
----
`tqdm` is a product of collaborative work.
Unless otherwise stated, all authors (see commit logs) retain copyright
for their respective work, and release the work under the MIT licence
(text below).
Exceptions or notable authors are listed below
in reverse chronological order:
* files: *
  MPL-2.0 2015-2024 (c) Casper da Costa-Luis
  [casperdcl](https://github.com/casperdcl).
* files: tqdm/_tqdm.py
  MIT 2016 (c) [PR #96] on behalf of Google Inc.
* files: tqdm/_tqdm.py README.rst .gitignore
  MIT 2013 (c) Noam Yorav-Raphael, original author.

Mozilla Public Licence (MPL) v. 2.0 - Exhibit A
-----------------------------------------------
This Source Code Form is subject to the terms of the
Mozilla Public License, v. 2.0.
If a copy of the MPL was not distributed with this project,
You can obtain one at https://mozilla.org/MPL/2.0/.

A copy of the Mozilla Public License 2.0  license can be found
in the 'Standard Licenses' section

MIT License (MIT)
```

```
----------------
Copyright (c) 2013 noamraph
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
```

```
================================================================================
================================================================================
```

Pandas

```
Copyright (c) 2008-2011, AQR Capital Management, LLC, Lambda Foundry, Inc.
and PyData Development Team
All rights reserved.

Copyright (c) 2011-2025, Open source contributors.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.

* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

4th Pary Dependencies
---------------------
package_name: numpy
license_type: BSD License
license_text:
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
```

```
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSES_bundled.txt
--------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.
Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  Copyright (c) 1992-2013 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                        reserved.
$COPYRIGHT$
Additional copyrights may follow
$HEADER$
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: dragon4
```

```
Files: numpy/_core/src/multiarray/dragon4.c
License: MIT
  /*
 * Copyright (c) 2014 Ryan Juckett
 *
 * Permission is hereby granted, free of charge, to any person obtaining a copy
 * of this software and associated documentation files (the "Software"), to
 * deal in the Software without restriction, including without limitation the
 * rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
 * sell copies of the Software, and to permit persons to whom the Software is
 * furnished to do so, subject to the following conditions:
 *
 * The above copyright notice and this permission notice shall be included in
 * all copies or substantial portions of the Software.
 *
 * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
 * IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
 * FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
 * AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
 * LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
 * FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
 * IN THE SOFTWARE.
 */
/*
 * This file contains a modified version of Ryan Juckett's Dragon4
 * implementation, obtained from https://www.ryanjuckett.com,
 * which has been ported from C++ to C and which has
 * modifications specific to printing floats in numpy.
 *
 * Ryan Juckett's original code was under the Zlib license; he gave numpy
 * permission to include it under the MIT license instead.
 */

Name: libdivide
Files: numpy/_core/include/numpy/libdivide/*
License: Zlib
    zlib License
  ------------
  Copyright (C) 2010 - 2019 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2019 Kim Walisch, <kim.walisch@gmail.com>
  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.
  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:
  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.
Note that the following files are vendored in the repository and sdist but not
installed in built numpy packages:

Name: Meson
Files: vendored-meson/meson/*
License: Apache 2.0
# Copyright 2016 The Meson development team

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
```

```
Name: spin
Files: .spin/cmds.py
License: BSD-3
  BSD 3-Clause License
Copyright (c) 2021--2022, Scientific Python project
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived from
   this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
LICENSES_bundled in different directories:
----------------------------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: SPLITMIX64
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: Sebastiano Vigna © 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md

Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
License: MIT
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md

Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: D. E. Shaw Research
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md

Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md

Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md

Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: Jeff Bezanson, Stefan Karpinski, Viral B. Shah, and other contributors
For license text, see/numpy/blob/numpy/random/src/distributions/LICENSE.md

Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA
Open Source License (NCSA) and The 3-Clause BSD License
For license text, see/numpy/blob/numpy/random/LICENSE.md
```

```
Name: numpy.core.ma
Files: /numpy/blob/numpy/ma/*
License: University of Georgia and Pierre G.F. Gerard-Marchant
For license text, see /numpy/blob/numpy/ma/LICENSE

RECURSIVE LICENSE Mentioned in  LICENSES_bundled in different directories (list above)
--------------------------------------------------------------------------------

Name: SPLITMIX64
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all copyright
and related and neighboring rights to this software to the public domain worldwide.
This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.

Name: SFC64
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: PHILOX
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the
following conditions are met:
   - Redistributions of source code must retain the above
   copyright notice, this list of conditions, and the following disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions, and the
   following disclaimer in the documentation and/or
   other materials provided with the distribution.
    - Neither the name of D. E. Shaw Research nor the
    names of its contributors may be used to endorse
    or promote products derived from this software
    without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
Name: PCG64
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any
person obtaining a copy of this software and associated
documentation files (the "Software"), to deal in the
Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute,
sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED
TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: MT19937
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the original
design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
   -  Redistributions of source code must retain the above
   copyright notice, this list of conditions and the following
   disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - The names of its contributors may not be used to endorse
    or promote products derived from this software without
    specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND
FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT
SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (
INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF
THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval function
from Richard J. Wagner's implementation of the Mersenne Twister RNG,
optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
```

```
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Random
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal with the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
 - Redistributions of source code must retain the above copyright
 notice, this list of conditions and the following disclaimers.
 - Redistributions in binary form must reproduce the above copyright
 notice, this list of conditions and the following disclaimers in the
 documentation and/or other materials provided with the distribution.
 - Neither the names of Kevin Sheppard, nor the names of any
 contributors may be used to endorse or promote products derived
 from this Software without specific prior written permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR
ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.

3-Clause BSD License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
    - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
    documentation and/or other materials provided with the distribution.
```

```
   - Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original
sources, often the algorithm's designer. Component licenses are
located with the component code.

Name: numpy.core.ma
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This distribution of NumPy also bundles the following software:
Name: OpenBLAS
Files: numpy/.dylibs/libscipy_openblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.

     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
```

```
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: numpy/.dylibs/libscipy_openblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: libquadmath
Files: numpy/.dylibs/libquadmath*.so
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
```

```
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

python-dateutil
---------------
Copyright 2017- Paul Ganssle <paul@ganssle.io>
Copyright 2017- dateutil contributors (see AUTHORS file)
   Licensed under the Apache License, Version 2.0 (the "License");
   you may not use this file except in compliance with the License.
   You may obtain a copy of the License at
       http://www.apache.org/licenses/LICENSE-2.0
   Unless required by applicable law or agreed to in writing, software
   distributed under the License is distributed on an "AS IS" BASIS,
   WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
   See the License for the specific language governing permissions and
   limitations under the License.
The above license applies to all contributions after 2017-12-01, as well as
all contributions that have been re-licensed (see AUTHORS file for the list of
contributors who have re-licensed their code).
The full text of the Apache License here:

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

dateutil - Extensions to the standard Python datetime module.
Copyright (c) 2003-2011 - Gustavo Niemeyer <gustavo@niemeyer.net>
Copyright (c) 2012-2014 - Tomi Pieviläinen <tomi.pievilainen@iki.fi>
Copyright (c) 2014-2016 - Yaron de Leeuw <me@jarondl.net>
Copyright (c) 2015-     - Paul Ganssle <paul@ganssle.io>
Copyright (c) 2015-     - dateutil contributors (see AUTHORS file)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    * Redistributions of source code must retain the above copyright notice,
      this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright notice,
      this list of conditions and the following disclaimer in the documentation
      and/or other materials provided with the distribution.
    * Neither the name of the copyright holder nor the names of its
      contributors may be used to endorse or promote products derived from
      this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
The above BSD License Applies to all code, even that also covered by Apache 2.0.

six
---
Copyright (c) 2010-2020 Benjamin Peterson
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
```

```
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

pytz
----
Copyright (c) 2003-2019 Stuart Bishop <stuart@stuartbishop.net>
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

tzdata
------
Apache Software License 2.0
Copyright (c) 2020, Paul Ganssle (Google)
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

Vendored dependencies
=====================
Pyperclip - BSD license
-----------------------
Copyright (c) 2010, Albert Sweigart
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of the pyperclip nor the
      names of its contributors may be used to endorse or promote products
      derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY Albert Sweigart "AS IS" AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL Albert Sweigart BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
```

```
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

klib
----
The MIT License
Copyright (c) 2008-     Attractive Chaos <attractor@live.co.uk>
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS
BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN
ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

SAS7BDAT - MIT License
----------------------
Copyright (c) 2015 Jared Hobbs
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
```

==========
==========

Paramiko

```
Copyright Jeff Forcier

    GNU LESSER GENERAL PUBLIC LICENSE
         Version 2.1, February 1999

A copy of the GNU Lesser General Public License v2.1, February 1999 license can be found
in the 'Standard Licenses' section
A copy of the GNU Lesser General Public License v2.1, February 1999 license can be found
in the 'Standard Licenses' section

-----------
4th Party Dependencies
---------------------

bcrypt
```

```
------
Copyright: Python Cryptographic Authority

                              Apache License
                        Version 2.0, January 2004
                     http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

cffi
----
Copyright:
This package has been mostly done by Armin Rigo with help from
Maciej Fijałkowski. The idea is heavily based (although not directly
copied) from LuaJIT ffi by Mike Pall.
Other contributors:
  Google Inc.
License:
Except when otherwise stated (look for LICENSE files in directories or
information at the beginning of each file) all software and
documentation is licensed as follows:
    The MIT License
    Permission is hereby granted, free of charge, to any person
    obtaining a copy of this software and associated documentation
    files (the "Software"), to deal in the Software without
    restriction, including without limitation the rights to use,
    copy, modify, merge, publish, distribute, sublicense, and/or
    sell copies of the Software, and to permit persons to whom the
    Software is furnished to do so, subject to the following conditions:
    The above copyright notice and this permission notice shall be included
    in all copies or substantial portions of the Software.
    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
    OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
    FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
    THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
    LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
    FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
    DEALINGS IN THE SOFTWARE.

cryptography
------------
Copyright: Python Cryptographic Authority
This software is made available under the terms of *either* of the licenses
found in LICENSE.APACHE or LICENSE.BSD. Contributions to cryptography are made
under the terms of *both* these licenses.
Apache license v2.0 see text above under bcrypt.
BSD License:
Copyright (c) Individual contributors.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
    3. Neither the name of PyCA Cryptography nor the names of its contributors
       may be used to endorse or promote products derived from this software
       without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
```

```
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

pycparser -- A C parser in Python
---------
Copyright (c) 2008-2020, Eli Bendersky
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of Eli Bendersky nor the names of its contributors may
  be used to endorse or promote products derived from this software without
  specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

PyNaCl
------
Copyright: Python Cryptographic Authority
Apache license v2.0 see text above under bcrypt.
```

==========
==========

pdf2image

```
Copyright (c) 2017 Edouard Belval

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

==========
Fourth Party Dependency Pillow

The Python Imaging Library (PIL) is
    Copyright © 1997-2011 by Secret Labs AB
    Copyright © 1995-2011 by Fredrik Lundh and contributors
```

```
Pillow is the friendly PIL fork. It is
    Copyright © 2010-2024 by Jeffrey A. Clark and contributors

Like PIL, Pillow is licensed under the open source HPND License:

By obtaining, using, and/or copying this software and/or its associated
documentation, you agree that you have read, understood, and will comply
with the following terms and conditions:

Permission to use, copy, modify and distribute this software and its
documentation for any purpose and without fee is hereby granted,
provided that the above copyright notice appears in all copies, and that
both that copyright notice and this permission notice appear in supporting
documentation, and that the name of Secret Labs AB or the author not be
used in advertising or publicity pertaining to distribution of the software
without specific, written prior permission.

SECRET LABS AB AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS
SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS.
IN NO EVENT SHALL SECRET LABS AB OR THE AUTHOR BE LIABLE FOR ANY SPECIAL,
INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM
LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE
OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE.
```

```
================================================================================
================================================================================
```

psutil

```
BSD 3-Clause License
Copyright (c) 2009, Jay Loden, Dave Daeschler, Giampaolo Rodola
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name of the psutil authors nor the names of its contributors
   may be used to endorse or promote products derived from this software without
   specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

pydantic

```
Copyright (c) 2017 to present Pydantic Services Inc. and individual contributors.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
```

```
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

4th Party Dependencies
----------------------
pydantic depends on the following technologies/licenses.
A copy of each license is included accordingly.

annotated-types (MIT)
---------------
Copyright (c) 2022 the contributors
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

pydantic_core (MIT)
-------------
Copyright (c) 2022 Samuel Colvin
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

typing_extensions (PSF-2.0)
-----------------
Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010,
Copyright (c)
1995-2001 Corporation for National Research Initiatives; All Rights
Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam,
PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2
1. This LICENSE AGREEMENT is between the Python Software Foundation
("PSF"), and the Individual or Organization ("Licensee") accessing and
otherwise using this software ("Python") in source or binary form and
its associated documentation.
2. Subject to the terms and conditions of this License Agreement, PSF hereby
grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce,
analyze, test, perform and/or display publicly, prepare derivative works,
distribute, and otherwise use Python alone or in any derivative version,
```

```
provided, however, that PSF's License Agreement and PSF's notice of copyright,
i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010,
2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019 Python Software Foundation;
All Rights Reserved" are retained in Python alone or in any derivative version
prepared by Licensee.
3. In the event Licensee prepares a derivative work that is based on
or incorporates Python or any part thereof, and wants to make
the derivative work available to others as provided herein, then
Licensee hereby agrees to include in any such work a brief summary of
the changes made to Python.
4. PSF is making Python available to Licensee on an "AS IS"
basis.  PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND
DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT
INFRINGE ANY THIRD PARTY RIGHTS.
5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON
FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS
A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON,
OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material
breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any
relationship of agency, partnership, or joint venture between PSF and
Licensee.  This License Agreement does not grant permission to use PSF
trademarks or trade name in a trademark sense to endorse or promote
products or services of Licensee, or any third party.
8. By copying, installing or otherwise using Python, Licensee
agrees to be bound by the terms and conditions of this License
Agreement.

Typing-inspection (MIT)
-----------------
Copyright (c) 2025 Victorien
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE
OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
```

```
================================================================================
================================================================================
```

pyod

```
Copyright (c) 2018, Yue Zhao
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
```

```
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


4th Party Dependencies
----------------------
contourpy
---------
Copyright (c) 2021-2024, ContourPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived from
   this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

cycler
------
Copyright (c) 2015, matplotlib project
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the matplotlib project nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

fonttools
---------
Copyright (c) 2017 Just van Rossum
Permission is hereby granted, free of charge, to any person obtaining a copy
```

```
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

importlib_resources
-------------------
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

joblib
------
Copyright (c) 2008-2021, The joblib developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

kiwisolver
----------
Kiwi is licensed under the terms of the Modified BSD License (also known as
New or Revised BSD), as follows:
Copyright (c) 2013, Nucleic Development Team
All rights reserved.
- Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
- Redistributions of source code must retain the above copyright notice, this
list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this
list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
- Neither the name of the Nucleic Development Team nor the names of its
contributors may be used to endorse or promote products derived from this
software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
```

```
DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

About Kiwi
----------
Chris Colbert began the Kiwi project in December 2013 in an effort to
create a blisteringly fast UI constraint solver. Chris is still the
project lead.
The Nucleic Development Team is the set of all contributors to the Nucleic
project and its subprojects.
The core team that coordinates development on GitHub can be found here:
http://github.com/nucleic. The current team consists of:
* Chris Colbert

Our Copyright Policy
--------------------
Nucleic uses a shared copyright model. Each contributor maintains copyright
over their contributions to Nucleic. But, it is important to note that these
contributions are typically only changes to the repositories. Thus, the Nucleic
source code, in its entirety is not the copyright of any single person or
institution. Instead, it is the collective copyright of the entire Nucleic
Development Team. If individual contributors want to maintain a record of what
changes/contributions they have specific copyright on, they should indicate
their copyright in the commit message of the change, when they commit the
change to one of the Nucleic repositories.

With this in mind, the following banner should be used in any source code file
to indicate the copyright and license terms:
#------------------------------------------------------------------------------
# Copyright (c) 2013, Nucleic Development Team.
#
# Distributed under the terms of the Modified BSD License.
#
# The full license is in the file LICENSE, distributed with this software.
#------------------------------------------------------------------------------


lvmlite
-------
Copyright (c) 2014-, Continuum Analytics, Inc.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The llvmlite source tree includes code from LLVM that is governed by the
```

```
following license.

The Apache License v2.0 with LLVM Exceptions:

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
---- LLVM Exceptions to the Apache 2.0 License ----
As an exception, if, as a result of your compiling your source code, portions
of this Software are embedded into an Object form of such source code, you
may redistribute such embedded portions in such Object form without complying
with the conditions of Sections 4(a), 4(b) and 4(d) of the License.
In addition, if you combine or link compiled forms of this Software with
software that is licensed under the GPLv2 ("Combined Software") and if a
court of competent jurisdiction determines that the patent provision (Section
3), the indemnity provision (Section 9) or other Section of the License
conflicts with the conditions of the GPLv2, you may retroactively and
prospectively choose to deem waived or otherwise exclude such Section(s) of
the License, but only in their entirety and only with respect to the Combined
Software.

matplotlib
----------
License agreement for matplotlib versions 1.3.0 and later
1. This LICENSE AGREEMENT is between the Matplotlib Development Team
("MDT"), and the Individual or Organization ("Licensee") accessing and
otherwise using matplotlib software in source or binary form and its
associated documentation.
2. Subject to the terms and conditions of this License Agreement, MDT
hereby grants Licensee a nonexclusive, royalty-free, world-wide license
to reproduce, analyze, test, perform and/or display publicly, prepare
derivative works, distribute, and otherwise use matplotlib
alone or in any derivative version, provided, however, that MDT's
License Agreement and MDT's notice of copyright, i.e., "Copyright (c)
2012- Matplotlib Development Team; All Rights Reserved" are retained in
matplotlib  alone or in any derivative version prepared by
Licensee.
3. In the event Licensee prepares a derivative work that is based on or
incorporates matplotlib or any part thereof, and wants to
make the derivative work available to others as provided herein, then
Licensee hereby agrees to include in any such work a brief summary of
the changes made to matplotlib .
4. MDT is making matplotlib available to Licensee on an "AS
IS" basis.  MDT MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, MDT MAKES NO AND
DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF MATPLOTLIB
WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. MDT SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF MATPLOTLIB
 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR
LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING
MATPLOTLIB , OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF
THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material
breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any
relationship of agency, partnership, or joint venture between MDT and
Licensee.  This License Agreement does not grant permission to use MDT
trademarks or trade name in a trademark sense to endorse or promote
products or services of Licensee, or any third party.
8. By copying, installing or otherwise using matplotlib ,
Licensee agrees to be bound by the terms and conditions of this License
Agreement.
```

```
License agreement for matplotlib versions prior to 1.3.0
1. This LICENSE AGREEMENT is between John D. Hunter ("JDH"), and the
Individual or Organization ("Licensee") accessing and otherwise using
matplotlib software in source or binary form and its associated
documentation.
2. Subject to the terms and conditions of this License Agreement, JDH
hereby grants Licensee a nonexclusive, royalty-free, world-wide license
to reproduce, analyze, test, perform and/or display publicly, prepare
derivative works, distribute, and otherwise use matplotlib
alone or in any derivative version, provided, however, that JDH's
License Agreement and JDH's notice of copyright, i.e., "Copyright (c)
2002-2011 John D. Hunter; All Rights Reserved" are retained in
matplotlib  alone or in any derivative version prepared by
Licensee.
3. In the event Licensee prepares a derivative work that is based on or
incorporates matplotlib  or any part thereof, and wants to
make the derivative work available to others as provided herein, then
Licensee hereby agrees to include in any such work a brief summary of
the changes made to matplotlib.
4. JDH is making matplotlib  available to Licensee on an "AS
IS" basis.  JDH MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, JDH MAKES NO AND
DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF MATPLOTLIB
WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. JDH SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF MATPLOTLIB
 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR
LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING
MATPLOTLIB , OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF
THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material
breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any
relationship of agency, partnership, or joint venture between JDH and
Licensee.  This License Agreement does not grant permission to use JDH
trademarks or trade name in a trademark sense to endorse or promote
products or services of Licensee, or any third party.
8. By copying, installing or otherwise using matplotlib,
Licensee agrees to be bound by the terms and conditions of this License
Agreement.

The cmr10.pfb file is a Type-1 version of one of Knuth's Computer Modern fonts.
It is included here as test data only, but the following license applies.
Copyright (c) 1997, 2009, American Mathematical Society (http://www.ams.org).
All Rights Reserved.
"cmb10" is a Reserved Font Name for this Font Software.
"cmbsy10" is a Reserved Font Name for this Font Software.
"cmbsy5" is a Reserved Font Name for this Font Software.
"cmbsy6" is a Reserved Font Name for this Font Software.
"cmbsy7" is a Reserved Font Name for this Font Software.
"cmbsy8" is a Reserved Font Name for this Font Software.
"cmbsy9" is a Reserved Font Name for this Font Software.
"cmbx10" is a Reserved Font Name for this Font Software.
"cmbx12" is a Reserved Font Name for this Font Software.
"cmbx5" is a Reserved Font Name for this Font Software.
"cmbx6" is a Reserved Font Name for this Font Software.
"cmbx7" is a Reserved Font Name for this Font Software.
"cmbx8" is a Reserved Font Name for this Font Software.
"cmbx9" is a Reserved Font Name for this Font Software.
"cmbxsl10" is a Reserved Font Name for this Font Software.
"cmbxti10" is a Reserved Font Name for this Font Software.
"cmcsc10" is a Reserved Font Name for this Font Software.
"cmcsc8" is a Reserved Font Name for this Font Software.
"cmcsc9" is a Reserved Font Name for this Font Software.
"cmdunh10" is a Reserved Font Name for this Font Software.
"cmex10" is a Reserved Font Name for this Font Software.
"cmex7" is a Reserved Font Name for this Font Software.
```

"cmex8" is a Reserved Font Name for this Font Software.
"cmex9" is a Reserved Font Name for this Font Software.
"cmff10" is a Reserved Font Name for this Font Software.
"cmfi10" is a Reserved Font Name for this Font Software.
"cmfib8" is a Reserved Font Name for this Font Software.
"cminch" is a Reserved Font Name for this Font Software.
"cmitt10" is a Reserved Font Name for this Font Software.
"cmmi10" is a Reserved Font Name for this Font Software.
"cmmi12" is a Reserved Font Name for this Font Software.
"cmmi5" is a Reserved Font Name for this Font Software.
"cmmi6" is a Reserved Font Name for this Font Software.
"cmmi7" is a Reserved Font Name for this Font Software.
"cmmi8" is a Reserved Font Name for this Font Software.
"cmmi9" is a Reserved Font Name for this Font Software.
"cmmib10" is a Reserved Font Name for this Font Software.
"cmmib5" is a Reserved Font Name for this Font Software.
"cmmib6" is a Reserved Font Name for this Font Software.
"cmmib7" is a Reserved Font Name for this Font Software.
"cmmib8" is a Reserved Font Name for this Font Software.
"cmmib9" is a Reserved Font Name for this Font Software.
"cmr10" is a Reserved Font Name for this Font Software.
"cmr12" is a Reserved Font Name for this Font Software.
"cmr17" is a Reserved Font Name for this Font Software.
"cmr5" is a Reserved Font Name for this Font Software.
"cmr6" is a Reserved Font Name for this Font Software.
"cmr7" is a Reserved Font Name for this Font Software.
"cmr8" is a Reserved Font Name for this Font Software.
"cmr9" is a Reserved Font Name for this Font Software.
"cmsl10" is a Reserved Font Name for this Font Software.
"cmsl12" is a Reserved Font Name for this Font Software.
"cmsl8" is a Reserved Font Name for this Font Software.
"cmsl9" is a Reserved Font Name for this Font Software.
"cmsltt10" is a Reserved Font Name for this Font Software.
"cmss10" is a Reserved Font Name for this Font Software.
"cmss12" is a Reserved Font Name for this Font Software.
"cmss17" is a Reserved Font Name for this Font Software.
"cmss8" is a Reserved Font Name for this Font Software.
"cmss9" is a Reserved Font Name for this Font Software.
"cmssbx10" is a Reserved Font Name for this Font Software.
"cmssdc10" is a Reserved Font Name for this Font Software.
"cmssi10" is a Reserved Font Name for this Font Software.
"cmssi12" is a Reserved Font Name for this Font Software.
"cmssi17" is a Reserved Font Name for this Font Software.
"cmssi8" is a Reserved Font Name for this Font Software.
"cmssi9" is a Reserved Font Name for this Font Software.
"cmssq8" is a Reserved Font Name for this Font Software.
"cmssqi8" is a Reserved Font Name for this Font Software.
"cmsy10" is a Reserved Font Name for this Font Software.
"cmsy5" is a Reserved Font Name for this Font Software.
"cmsy6" is a Reserved Font Name for this Font Software.
"cmsy7" is a Reserved Font Name for this Font Software.
"cmsy8" is a Reserved Font Name for this Font Software.
"cmsy9" is a Reserved Font Name for this Font Software.
"cmtcsc10" is a Reserved Font Name for this Font Software.
"cmtex10" is a Reserved Font Name for this Font Software.
"cmtex8" is a Reserved Font Name for this Font Software.
"cmtex9" is a Reserved Font Name for this Font Software.
"cmti10" is a Reserved Font Name for this Font Software.
"cmti12" is a Reserved Font Name for this Font Software.
"cmti7" is a Reserved Font Name for this Font Software.
"cmti8" is a Reserved Font Name for this Font Software.
"cmti9" is a Reserved Font Name for this Font Software.
"cmtt10" is a Reserved Font Name for this Font Software.
"cmtt12" is a Reserved Font Name for this Font Software.
"cmtt8" is a Reserved Font Name for this Font Software.
"cmtt9" is a Reserved Font Name for this Font Software.
"cmu10" is a Reserved Font Name for this Font Software.

```
"cmvtt10" is a Reserved Font Name for this Font Software.
"euex10" is a Reserved Font Name for this Font Software.
"euex7" is a Reserved Font Name for this Font Software.
"euex8" is a Reserved Font Name for this Font Software.
"euex9" is a Reserved Font Name for this Font Software.
"eufb10" is a Reserved Font Name for this Font Software.
"eufb5" is a Reserved Font Name for this Font Software.
"eufb7" is a Reserved Font Name for this Font Software.
"eufm10" is a Reserved Font Name for this Font Software.
"eufm5" is a Reserved Font Name for this Font Software.
"eufm7" is a Reserved Font Name for this Font Software.
"eurb10" is a Reserved Font Name for this Font Software.
"eurb5" is a Reserved Font Name for this Font Software.
"eurb7" is a Reserved Font Name for this Font Software.
"eurm10" is a Reserved Font Name for this Font Software.
"eurm5" is a Reserved Font Name for this Font Software.
"eurm7" is a Reserved Font Name for this Font Software.
"eusb10" is a Reserved Font Name for this Font Software.
"eusb5" is a Reserved Font Name for this Font Software.
"eusb7" is a Reserved Font Name for this Font Software.
"eusm10" is a Reserved Font Name for this Font Software.
"eusm5" is a Reserved Font Name for this Font Software.
"eusm7" is a Reserved Font Name for this Font Software.
"lasy10" is a Reserved Font Name for this Font Software.
"lasy5" is a Reserved Font Name for this Font Software.
"lasy6" is a Reserved Font Name for this Font Software.
"lasy7" is a Reserved Font Name for this Font Software.
"lasy8" is a Reserved Font Name for this Font Software.
"lasy9" is a Reserved Font Name for this Font Software.
"lasyb10" is a Reserved Font Name for this Font Software.
"lcircle1" is a Reserved Font Name for this Font Software.
"lcirclew" is a Reserved Font Name for this Font Software.
"lcmss8" is a Reserved Font Name for this Font Software.
"lcmssb8" is a Reserved Font Name for this Font Software.
"lcmssi8" is a Reserved Font Name for this Font Software.
"line10" is a Reserved Font Name for this Font Software.
"linew10" is a Reserved Font Name for this Font Software.
"msam10" is a Reserved Font Name for this Font Software.
"msam5" is a Reserved Font Name for this Font Software.
"msam6" is a Reserved Font Name for this Font Software.
"msam7" is a Reserved Font Name for this Font Software.
"msam8" is a Reserved Font Name for this Font Software.
"msam9" is a Reserved Font Name for this Font Software.
"msbm10" is a Reserved Font Name for this Font Software.
"msbm5" is a Reserved Font Name for this Font Software.
"msbm6" is a Reserved Font Name for this Font Software.
"msbm7" is a Reserved Font Name for this Font Software.
"msbm8" is a Reserved Font Name for this Font Software.
"msbm9" is a Reserved Font Name for this Font Software.
"wncyb10" is a Reserved Font Name for this Font Software.
"wncyi10" is a Reserved Font Name for this Font Software.
"wncyr10" is a Reserved Font Name for this Font Software.
"wncysc10" is a Reserved Font Name for this Font Software.
"wncyss10" is a Reserved Font Name for this Font Software.

This Font Software is licensed under the SIL Open Font License, Version 1.1.
This license is copied below, and is also available with a FAQ at:
http://scripts.sil.org/OFL

SIL OPEN FONT LICENSE Version 1.1 - 26 February 2007
-----------------------------------------------------------
PREAMBLE
The goals of the Open Font License (OFL) are to stimulate worldwide
development of collaborative font projects, to support the font creation
efforts of academic and linguistic communities, and to provide a free and
open framework in which fonts may be shared and improved in partnership
with others.
```

```
The OFL allows the licensed fonts to be used, studied, modified and
redistributed freely as long as they are not sold by themselves. The
fonts, including any derivative works, can be bundled, embedded,
redistributed and/or sold with any software provided that any reserved
names are not used by derivative works. The fonts and derivatives,
however, cannot be released under any other type of license. The
requirement for fonts to remain under this license does not apply
to any document created using the fonts or their derivatives.
DEFINITIONS
"Font Software" refers to the set of files released by the Copyright
Holder(s) under this license and clearly marked as such. This may
include source files, build scripts and documentation.
"Reserved Font Name" refers to any names specified as such after the
copyright statement(s).
"Original Version" refers to the collection of Font Software components as
distributed by the Copyright Holder(s).
"Modified Version" refers to any derivative made by adding to, deleting,
or substituting -- in part or in whole -- any of the components of the
Original Version, by changing formats or by porting the Font Software to a
new environment.
"Author" refers to any designer, engineer, programmer, technical
writer or other person who contributed to the Font Software.
PERMISSION & CONDITIONS
Permission is hereby granted, free of charge, to any person obtaining
a copy of the Font Software, to use, study, copy, merge, embed, modify,
redistribute, and sell modified and unmodified copies of the Font
Software, subject to the following conditions:
1) Neither the Font Software nor any of its individual components,
in Original or Modified Versions, may be sold by itself.
2) Original or Modified Versions of the Font Software may be bundled,
redistributed and/or sold with any software, provided that each copy
contains the above copyright notice and this license. These can be
included either as stand-alone text files, human-readable headers or
in the appropriate machine-readable metadata fields within text or
binary files as long as those fields can be easily viewed by the user.
3) No Modified Version of the Font Software may use the Reserved Font
Name(s) unless explicit written permission is granted by the corresponding
Copyright Holder. This restriction only applies to the primary font name as
presented to the users.
4) The name(s) of the Copyright Holder(s) or the Author(s) of the Font
Software shall not be used to promote, endorse or advertise any
Modified Version, except to acknowledge the contribution(s) of the
Copyright Holder(s) and the Author(s) or with their explicit written
permission.
5) The Font Software, modified or unmodified, in part or in whole,
must be distributed entirely under this license, and must not be
distributed under any other license. The requirement for fonts to
remain under this license does not apply to any document created
using the Font Software.
TERMINATION
This license becomes null and void if any of the above conditions are
not met.
DISCLAIMER
THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT
OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT. IN NO EVENT SHALL THE
COPYRIGHT HOLDER BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL
DAMAGES, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF THE USE OR INABILITY TO USE THE FONT SOFTWARE OR FROM
OTHER DEALINGS IN THE FONT SOFTWARE.

BaKoMa Fonts Licence
--------------------
  This licence covers two font packs (known as BaKoMa Fonts Collection,
  which is available at `CTAN:fonts/cm/ps-type1/bakoma/'):
```

```
    1) BaKoMa-CM (1.1/12-Nov-94)
       Computer Modern Fonts in PostScript Type 1 and TrueType font formats.
    2) BaKoMa-AMS (1.2/19-Jan-95)
       AMS TeX fonts in PostScript Type 1 and TrueType font formats.
  Copyright (C) 1994, 1995, Basil K. Malyshev. All Rights Reserved.
  Permission to copy and distribute these fonts for any purpose is
  hereby granted without fee, provided that the above copyright notice,
  author statement and this permission notice appear in all copies of
  these fonts and related documentation.
  Permission to modify and distribute modified fonts for any purpose is
  hereby granted without fee, provided that the copyright notice,
  author statement, this permission notice and location of original
  fonts (http://www.ctan.org/tex-archive/fonts/cm/ps-type1/bakoma)
  appear in all copies of modified fonts and related documentation.
  Permission to use these fonts (embedding into PostScript, PDF, SVG
  and printing by using any software) is hereby granted without fee.
  It is not required to provide any notices about using these fonts.
 Basil K. Malyshev
 INSTITUTE FOR HIGH ENERGY PHYSICS
 IHEP, OMVT
 Moscow Region
 142281 PROTVINO
 RUSSIA
 E-Mail: bakoma@mail.ru
      or malyshev@mail.ihep.ru

Copyright (c) 2010-2013 by tyPoland Lukasz Dziedzic with
Reserved Font Name "Carlito".
This Font Software is licensed under the SIL Open Font License, Version 1.1.
This license is copied below, and is also available with a FAQ at:
http://scripts.sil.org/OFL

SIL OPEN FONT LICENSE Version 1.1 - 26 February 2007
------------------------------------------------------------
PREAMBLE
The goals of the Open Font License (OFL) are to stimulate worldwide
development of collaborative font projects, to support the font
creation efforts of academic and linguistic communities, and to
provide a free and open framework in which fonts may be shared
and improved in partnership with others.
The OFL allows the licensed fonts to be used, studied,
modified and redistributed freely as long as they are not
sold by themselves. The fonts, including any derivative works,
can be bundled, embedded, redistributed and/or sold with any
software provided that any reserved names are not used by
derivative works. The fonts and derivatives, however,
cannot be released under any other type of license.
The requirement for fonts to remain under this license does
not apply to any document created using the fonts or their derivatives.
DEFINITIONS
"Font Software" refers to the set of files released by the
Copyright Holder(s) under this license and clearly marked as such.
This may include source files, build scripts and documentation.
"Reserved Font Name" refers to any names specified as such after
the copyright statement(s).
"Original Version" refers to the collection of Font Software
components as distributed by the Copyright Holder(s).
"Modified Version" refers to any derivative made by adding to,
deleting, or substituting -- in part or in whole -- any of the
components of the Original Version, by changing formats or by
porting the Font Software to a new environment.
"Author" refers to any designer, engineer, programmer,
technical writer or other person who contributed to the Font Software.
PERMISSION & CONDITIONS
Permission is hereby granted, free of charge, to any person obtaining
a copy of the Font Software, to use, study, copy, merge, embed,
modify, redistribute, and sell modified and unmodified copies of
```

```
the Font Software, subject to the following conditions:
1) Neither the Font Software nor any of its individual components,
in Original or Modified Versions, may be sold by itself.
2) Original or Modified Versions of the Font Software may be bundled,
redistributed and/or sold with any software, provided that each copy
contains the above copyright notice and this license. These can be
included either as stand-alone text files, human-readable headers
or in the appropriate machine-readable metadata fields within text
or binary files as long as those fields can be easily viewed by the user.
3) No Modified Version of the Font Software may use the Reserved Font
Name(s) unless explicit written permission is granted by the corresponding
Copyright Holder. This restriction only applies to the primary font name
as presented to the users.
4) The name(s) of the Copyright Holder(s) or the Author(s) of the
Font Software shall not be used to promote, endorse or advertise
any Modified Version, except to acknowledge the contribution(s) of
the Copyright Holder(s) and the Author(s) or with their explicit written permission.
5) The Font Software, modified or unmodified, in part or in whole,
must be distributed entirely under this license, and must not be
distributed under any other license. The requirement for fonts to remain
under this license does not apply to any document created using the Font Software.
TERMINATION
This license becomes null and void if any of the above conditions are not met.
DISCLAIMER
THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT
OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT. IN NO EVENT SHALL
THE COPYRIGHT HOLDER BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL,
OR CONSEQUENTIAL DAMAGES, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF THE USE OR INABILITY TO USE
THE FONT SOFTWARE OR FROM OTHER DEALINGS IN THE FONT SOFTWARE.

Apache-Style Software License for ColorBrewer software and
ColorBrewer Color Schemes
Copyright (c) 2002 Cynthia Brewer, Mark Harrower, and
The Pennsylvania State University.
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing, software distributed
under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR
CONDITIONS OF ANY KIND, either express or implied. See the License for the
specific language governing permissions and limitations under the License.

The Courier10PitchBT-Bold.pfb file is a Type-1 version of
Courier 10 Pitch BT Bold by Bitstream, obtained from
<https://ctan.org/tex-archive/fonts/courierten>. It is included
here as test data only, but the following license applies.
(c) Copyright 1989-1992, Bitstream Inc., Cambridge, MA.
You are hereby granted permission under all Bitstream propriety rights
to use, copy, modify, sublicense, sell, and redistribute the 4 Bitstream
Charter (r) Type 1 outline fonts and the 4 Courier Type 1 outline fonts
for any purpose and without restriction; provided, that this notice is
left intact on all copies of such fonts and that Bitstream's trademark
is acknowledged as shown below on all unmodified copies of the 4 Charter
Type 1 fonts.
BITSTREAM CHARTER is a registered trademark of Bitstream Inc.
# CC0 1.0 Universal
## Statement of Purpose
The laws of most jurisdictions throughout the world automatically confer
exclusive Copyright and Related Rights (defined below) upon the creator and
subsequent owner(s) (each and all, an “owner”) of an original work of
authorship and/or a database (each, a “Work”).
Certain owners wish to permanently relinquish those rights to a Work for the
```

purpose of contributing to a commons of creative, cultural and scientific works ("Commons") that the public can reliably and without fear of later claims of infringement build upon, modify, incorporate in other works, reuse and redistribute as freely as possible in any form whatsoever and for any purposes, including without limitation commercial purposes. These owners may contribute to the Commons to promote the ideal of a free culture and the further production of creative, cultural and scientific works, or to gain reputation or greater distribution for their Work in part through the use and efforts of others.

For these and/or other purposes and motivations, and without any expectation of additional consideration or compensation, the person associating CC0 with a Work (the "Affirmer"), to the extent that he or she is an owner of Copyright and Related Rights in the Work, voluntarily elects to apply CC0 to the Work and publicly distribute the Work under its terms, with knowledge of his or her Copyright and Related Rights in the Work and the meaning and intended legal effect of CC0 on those rights.

1. Copyright and Related Rights. A Work made available under CC0 may be protected by copyright and related or neighboring rights ("Copyright and Related Rights"). Copyright and Related Rights include, but are not limited to, the following:
   1. the right to reproduce, adapt, distribute, perform, display, communicate, and translate a Work;
   2. moral rights retained by the original author(s) and/or performer(s);
   3. publicity and privacy rights pertaining to a person's image or likeness depicted in a Work;
   4. rights protecting against unfair competition in regards to a Work, subject to the limitations in paragraph 4(i), below;
   5. rights protecting the extraction, dissemination, use and reuse of data in a Work;
   6. database rights (such as those arising under Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, and under any national implementation thereof, including any amended or successor version of such directive); and
   7. other similar, equivalent or corresponding rights throughout the world based on applicable law or treaty, and any national implementations thereof.
2. Waiver. To the greatest extent permitted by, but not in contravention of, applicable law, Affirmer hereby overtly, fully, permanently, irrevocably and unconditionally waives, abandons, and surrenders all of Affirmer's Copyright and Related Rights and associated claims and causes of action, whether now known or unknown (including existing as well as future claims and causes of action), in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "Waiver"). Affirmer makes the Waiver for the benefit of each member of the public at large and to the detriment of Affirmer's heirs and successors, fully intending that such Waiver shall not be subject to revocation, rescission, cancellation, termination, or any other legal or equitable action to disrupt the quiet enjoyment of the Work by the public as contemplated by Affirmer's express Statement of Purpose.
3. Public License Fallback. Should any part of the Waiver for any reason be judged legally invalid or ineffective under applicable law, then the Waiver shall be preserved to the maximum extent permitted taking into account Affirmer's express Statement of Purpose. In addition, to the extent the Waiver is so judged Affirmer hereby grants to each affected person a royalty-free, non transferable, non sublicensable, non exclusive, irrevocable and unconditional license to exercise Affirmer's Copyright and Related Rights in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "License"). The License shall be deemed effective as of the date CC0 was applied by Affirmer to the Work. Should any part of the License for any reason be judged legally invalid or ineffective under applicable law, such partial invalidity or

```
   ineffectiveness shall not invalidate the remainder of the License, and in
   such case Affirmer hereby affirms that he or she will not (i) exercise any
   of his or her remaining Copyright and Related Rights in the Work or (ii)
   assert any associated claims and causes of action with respect to the Work,
   in either case contrary to Affirmer’s express Statement of Purpose.
4. Limitations and Disclaimers.
   1. No trademark or patent rights held by Affirmer are waived, abandoned,
      surrendered, licensed or otherwise affected by this document.
   2. Affirmer offers the Work as-is and makes no representations or warranties
      of any kind concerning the Work, express, implied, statutory or
      otherwise, including without limitation warranties of title,
      merchantability, fitness for a particular purpose, non infringement, or
      the absence of latent or other defects, accuracy, or the present or
      absence of errors, whether or not discoverable, all to the greatest
      extent permissible under applicable law.
   3. Affirmer disclaims responsibility for clearing rights of other persons
      that may apply to the Work or any use thereof, including without
      limitation any person’s Copyright and Related Rights in the Work.
      Further, Affirmer disclaims responsibility for obtaining any necessary
      consents, permissions or other rights required for any use of the Work.
   4. Affirmer understands and acknowledges that Creative Commons is not a
      party to this document and has no duty or obligation with respect to this
      CC0 or use of the Work.
For more information, please see
http://creativecommons.org/publicdomain/zero/1.0/.

Module creating PyQt4 form dialogs/layouts to edit various type of parameters
formlayout License Agreement (MIT License)
Copyright (c) 2009 Pierre Raybaut
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following
conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.

https://github.com/altercation/solarized/blob/master/LICENSE
Copyright (c) 2011 Ethan Schoonover
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.

STIX Font License
```

```
24 May 2010
Copyright (c) 2001-2010 by the STI Pub Companies, consisting of the American
Institute of Physics, the American Chemical Society, the American Mathematical
Society, the American Physical Society, Elsevier, Inc., and The Institute of
Electrical and Electronic Engineers, Inc. (www.stixfonts.org), with Reserved
Font Name STIX Fonts, STIX Fonts (TM) is a  trademark of The Institute of
Electrical and Electronics Engineers, Inc.
Portions copyright (c) 1998-2003 by MicroPress, Inc. (www.micropress-inc.com),
with Reserved Font Name TM Math. To obtain additional mathematical fonts, please
contact MicroPress, Inc., 68-30 Harrow Street, Forest Hills, NY 11375, USA,
Phone: (718) 575-1816.
Portions copyright (c) 1990 by Elsevier, Inc.
This Font Software is licensed under the SIL Open Font License, Version 1.1.
This license is copied below, and is also available with a FAQ at:
https://scripts.sil.org/OFL

SIL OPEN FONT LICENSE Version 1.1 - 26 February 2007
------------------------------------------------------------
PREAMBLE
The goals of the Open Font License (OFL) are to stimulate worldwide
development of collaborative font projects, to support the font creation
efforts of academic and linguistic communities, and to provide a free and
open framework in which fonts may be shared and improved in partnership
with others.
The OFL allows the licensed fonts to be used, studied, modified and
redistributed freely as long as they are not sold by themselves. The
fonts, including any derivative works, can be bundled, embedded,
redistributed and/or sold with any software provided that any reserved
names are not used by derivative works. The fonts and derivatives,
however, cannot be released under any other type of license. The
requirement for fonts to remain under this license does not apply
to any document created using the fonts or their derivatives.
DEFINITIONS
"Font Software" refers to the set of files released by the Copyright
Holder(s) under this license and clearly marked as such. This may
include source files, build scripts and documentation.
"Reserved Font Name" refers to any names specified as such after the
copyright statement(s).
"Original Version" refers to the collection of Font Software components as
distributed by the Copyright Holder(s).
"Modified Version" refers to any derivative made by adding to, deleting,
or substituting -- in part or in whole -- any of the components of the
Original Version, by changing formats or by porting the Font Software to a
new environment.
"Author" refers to any designer, engineer, programmer, technical
writer or other person who contributed to the Font Software.
PERMISSION & CONDITIONS
Permission is hereby granted, free of charge, to any person obtaining
a copy of the Font Software, to use, study, copy, merge, embed, modify,
redistribute, and sell modified and unmodified copies of the Font
Software, subject to the following conditions:
1) Neither the Font Software nor any of its individual components,
in Original or Modified Versions, may be sold by itself.
2) Original or Modified Versions of the Font Software may be bundled,
redistributed and/or sold with any software, provided that each copy
contains the above copyright notice and this license. These can be
included either as stand-alone text files, human-readable headers or
in the appropriate machine-readable metadata fields within text or
binary files as long as those fields can be easily viewed by the user.
3) No Modified Version of the Font Software may use the Reserved Font
Name(s) unless explicit written permission is granted by the corresponding
Copyright Holder. This restriction only applies to the primary font name as
presented to the users.
4) The name(s) of the Copyright Holder(s) or the Author(s) of the Font
Software shall not be used to promote, endorse or advertise any
Modified Version, except to acknowledge the contribution(s) of the
Copyright Holder(s) and the Author(s) or with their explicit written
```

```
permission.
5) The Font Software, modified or unmodified, in part or in whole,
must be distributed entirely under this license, and must not be
distributed under any other license. The requirement for fonts to
remain under this license does not apply to any document created
using the Font Software.
TERMINATION
This license becomes null and void if any of the above conditions are
not met.
DISCLAIMER
THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT
OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT. IN NO EVENT SHALL THE
COPYRIGHT HOLDER BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL
DAMAGES, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF THE USE OR INABILITY TO USE THE FONT SOFTWARE OR FROM
OTHER DEALINGS IN THE FONT SOFTWARE.

BSD-style license for gist/yorick colormaps.
  Copyright (c) 1996.  The Regents of the University of California.
    All rights reserved.
Permission to use, copy, modify, and distribute this software for any
purpose without fee is hereby granted, provided that this entire
notice is included in all copies of any software which is or includes
a copy or modification of this software and in all copies of the
supporting documentation for such software.
This work was produced at the University of California, Lawrence
Livermore National Laboratory under contract no. W-7405-ENG-48 between
the U.S. Department of Energy and The Regents of the University of
California for the operation of UC LLNL.

         DISCLAIMER
This software was prepared as an account of work sponsored by an
agency of the United States Government.  Neither the United States
Government nor the University of California nor any of their
employees, makes any warranty, express or implied, or assumes any
liability or responsibility for the accuracy, completeness, or
usefulness of any information, apparatus, product, or process
disclosed, or represents that its use would not infringe
privately-owned rights.  Reference herein to any specific commercial
products, process, or service by trade name, trademark, manufacturer,
or otherwise, does not necessarily constitute or imply its
endorsement, recommendation, or favoring by the United States
Government or the University of California.  The views and opinions of
authors expressed herein do not necessarily state or reflect those of
the United States Government or the University of California, and
shall not be used for advertising or product endorsement purposes.

    AUTHOR
David H. Munro wrote Yorick and Gist.  Berkeley Yacc (byacc) generated
the Yorick parser.  The routines in Math are from LAPACK and FFTPACK;
MathC contains C translations by David H. Munro.  The algorithms for
Yorick's random number generator and several special functions in
Yorick/include were taken from Numerical Recipes by Press, et. al.,
although the Yorick implementations are unrelated to those in
Numerical Recipes.  A small amount of code in Gist was adapted from
the X11R4 release, copyright M.I.T. -- the complete copyright notice
may be found in the (unused) file Gist/host.c.
============================================================================

numba
-----
Copyright (c) 2012, Anaconda, Inc.
All rights reserved.
Redistribution and use in source and binary forms, with or without
```

```
modification, are permitted provided that the following conditions are
met:
Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The Numba source tree includes vendored libraries governed by the following
licenses.

appdirs
-------
Copyright (c) 2010 ActiveState Software Inc.
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

NetworkX
--------
The dominance frontier algorithm is from a pull request
https://github.com/numba/numba/pull/4149/files which is based
on the implementation of NetworkX of dominance. NetworkX has the following
license:
NetworkX is distributed with the 3-clause BSD license.
::
  Copyright (C) 2004-2019, NetworkX Developers
  Aric Hagberg <hagberg@lanl.gov>
  Dan Schult <dschult@colgate.edu>
  Pieter Swart <swart@lanl.gov>
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
   * Redistributions of source code must retain the above copyright
     notice, this list of conditions and the following disclaimer.
   * Redistributions in binary form must reproduce the above
     copyright notice, this list of conditions and the following
     disclaimer in the documentation and/or other materials provided
     with the distribution.
   * Neither the name of the NetworkX Developers nor the names of its
     contributors may be used to endorse or promote products derived
     from this software without specific prior written permission.
```

```
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

jquery.graphviz.svg (https://github.com/mountainstorm/jquery.graphviz.svg/)
----------------------------------------------------------------------------
The DAG roadmap rendering code in docs/dagmap/ uses Javascript from this
package to draw graphs in HTML.
Copyright (c) 2015 Mountainstorm
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

CPython (https://github.com/python/cpython)
----------------------------------------
Numba source code that references URLs starting with:
https://github.com/python/cpython/
relates to use/inclusion of CPython source code which has the following license:

Python Software Foundation license, version 2
A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section

CPython unicode (https://github.com/python/cpython)
-------------------------------------------------
Numba's unicode support includes source code/algorithms from CPython's unicode
implementation, Numba source code that has a reference starting with:
https://github.com/python/cpython/
and contains in the path "Objects/unicodeobject.c" relates to use/inclusion of
CPython source code which has the following license along with the standard
CPython license:
Unicode implementation based on original code by Fredrik Lundh,
modified by Marc-Andre Lemburg <mal@lemburg.com>.
Major speed upgrades to the method implementations at the Reykjavik
NeedForSpeed sprint, by Fredrik Lundh and Andrew Dalke.
Copyright (c) Corporation for National Research Initiatives.

The original string type implementation is:
  Copyright (c) 1999 by Secret Labs AB
  Copyright (c) 1999 by Fredrik Lundh
By obtaining, using, and/or copying this software and/or its
associated documentation, you agree that you have read, understood,
and will comply with the following terms and conditions:
Permission to use, copy, modify, and distribute this software and its
associated documentation for any purpose and without fee is hereby
granted, provided that the above copyright notice appears in all
copies, and that both that copyright notice and this permission notice
```

```
appear in supporting documentation, and that the name of Secret Labs
AB or the author not be used in advertising or publicity pertaining to
distribution of the software without specific, written prior
permission.
SECRET LABS AB AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO
THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND
FITNESS.  IN NO EVENT SHALL SECRET LABS AB OR THE AUTHOR BE LIABLE FOR
ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT
OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

cloudpickle
-----------
This module was extracted from the `cloud` package, developed by
PiCloud, Inc.
Copyright (c) 2015, Cloudpickle contributors.
Copyright (c) 2012, Regents of the University of California.
Copyright (c) 2009 PiCloud, Inc. http://www.picloud.com.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of the University of California, Berkeley nor the
      names of its contributors may be used to endorse or promote
      products derived from this software without specific prior written
      permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
© 2020 GitHub, Inc.

NumPy (https://github.com/numpy/numpy)
---------------------------------------
Numba source code that references URLs starting with:
https://github.com/numpy/numpy
relates to use of/inclusion of/derivate work based on NumPy source code which
has the following license:
Copyright (c) 2005-2021, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
```

```
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

CUDA Half Precision Headers
--------------------------
The files numba/cuda/cuda_fp16.h and numba/cuda/cuda_fp16.hpp are vendored from
the CUDA Toolkit version 11.2.2 under the terms of the NVIDIA Software License
Agreement and CUDA Supplement to Software License Agreement, available at:
https://docs.nvidia.com/cuda/archive/11.2.2/eula/index.html
These files are distributable as listed in Attachment A:
https://docs.nvidia.com/cuda/archive/11.2.2/eula/index.html#attachment-a
--------------------------------------------------------------------------

numpy
-----
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This binary distribution of NumPy also bundles the following software:

Name: OpenBLAS
Files: extra-dll\libopenb*.dll
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
```

```
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: extra-dll\libopenb*.dll
Description: bundled in OpenBLAS
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSES_bundled.txt
--------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
```

```
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt

RECURSIVE LICENSE Mentioned in  LICENSES_bundled.txt
-----------------------------------------------------
lapack-lite
Copyright (c) 1992-2022 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2022 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2022 The University of Colorado Denver.  All rights
                        reserved.
Additional copyrights may follow
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

dragon4
-------
  Copyright (c) 2022 Ryan Juckett
  Permission is hereby granted, free of charge, to any person obtaining a copy
  of this software and associated documentation files (the "Software"), to
  deal in the Software without restriction, including without limitation the
  rights to use, copy, modify, merge, publish, distribute, sublicense, andor
  sell copies of the Software, and to permit persons to whom the Software is
  furnished to do so, subject to the following conditions:
  The above copyright notice and this permission notice shall be included in
  all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
  IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
```

```
  FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
  AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
  LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
  FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
  IN THE SOFTWARE.

libdivide
---------
zlib License
  Copyright (C) 2010 - 2022 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2022 Kim Walisch, <kim.walisch@gmail.com>
  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.
  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:
  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.

LICENSES_bundled in different directories:
-----------------------------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: SPLITMIX64
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: Sebastiano Vigna © 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md

Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
License: MIT
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md

Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: D. E. Shaw Research
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md

Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md

Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md

Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: Jeff Bezanson, Stefan Karpinski, Viral B. Shah, and other contributors
For license text, see/numpy/blob/numpy/random/src/distributions/LICENSE.md

Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA
Open Source License (NCSA) and The 3-Clause BSD License
For license text, see/numpy/blob/numpy/random/LICENSE.md

Name: numpy.core.ma
```

```
Files: /numpy/blob/numpy/ma/*
License: University of Georgia and Pierre G.F. Gerard-Marchant
For license text, see /numpy/blob/numpy/ma/LICENSE

RECURSIVE LICENSE Mentioned in  LICENSES_bundled in
different directories (list above)
--------------------------------------------------------------------------

Name: SPLITMIX64
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all
copyright and related and neighboring rights to this software to the
public domain worldwide. This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.

Name: SFC64
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: PHILOX
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
   - Redistributions of source code must retain the above
   copyright notice, this list of conditions, and the following
   disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions, and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - Neither the name of D. E. Shaw Research nor the names of its
    contributors may be used to endorse or promote products derived
    from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

Name: PCG64
```

```
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.

Name: MT19937
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the
original design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
   -  Redistributions of source code must retain the above
   copyright notice, this list of conditions and the following disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - The names of its contributors may not be used to endorse
    or promote products derived from this software without
    specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA,
OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval
function from Richard J. Wagner's implementation of the
Mersenne Twister RNG, optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
```

```
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the
Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE
OR OTHER DEALINGS IN THE SOFTWARE.

Name: Random
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal with the Software without restriction, including without
limitation the rights to use, copy, modify, merge, publish, distribute,
sublicense, and/or sell copies of the Software, and to permit persons
to whom the Software is furnished to do so, subject to the following
conditions:
Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimers.
Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimers in the
documentation and/or other materials provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of any contributors
may be used to endorse or promote products derived from this Software
without specific prior written permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR
ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.

3-Clause BSD License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
    - Redistributions of source code must retain the above
    copyright notice, this list of conditions and the following
    disclaimer.
    - Redistributions in binary form must reproduce the above
```

```
    copyright notice, this list of conditions and the following
    disclaimer in the documentation and/or other materials
    provided with the distribution.
   - Neither the name of the copyright holder nor the names
   of its contributors may be used to endorse or promote
   products derived from this software without specific
   prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original
sources, often the algorithm's designer. Component licenses
are located with the component code.

Name: numpy.core.ma
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the
following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-------------------------------------------------------------------------------

contourpy
---------
This software is made available under the terms of *either* of the
licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this
software is made under the terms of *both* these licenses.
Copyright (c) Donald Stufft and individual contributors.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
```

```
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
================================================================================


pillow
------
The Python Imaging Library (PIL) is
    Copyright © 1997-2011 by Secret Labs AB
    Copyright © 1995-2011 by Fredrik Lundh and contributors
Pillow is the friendly PIL fork. It is
    Copyright © 2010-2024 by Jeffrey A. Clark and contributors
Like PIL, Pillow is licensed under the open source HPND License:
By obtaining, using, and/or copying this software and/or its associated
documentation, you agree that you have read, understood, and will comply
with the following terms and conditions:
Permission to use, copy, modify and distribute this software and its
documentation for any purpose and without fee is hereby granted,
provided that the above copyright notice appears in all copies, and that
both that copyright notice and this permission notice appear in supporting
documentation, and that the name of Secret Labs AB or the author not be
used in advertising or publicity pertaining to distribution of the software
without specific, written prior permission.
SECRET LABS AB AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS
SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS.
IN NO EVENT SHALL SECRET LABS AB OR THE AUTHOR BE LIABLE FOR ANY SPECIAL,
INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM
LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE
OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE.

pyparsing
---------
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

python-dateutil
---------------
Copyright 2017- Paul Ganssle <paul@ganssle.io>
Copyright 2017- dateutil contributors (see AUTHORS file)
   Licensed under the Apache License, Version 2.0 (the "License");
   you may not use this file except in compliance with the License.
   You may obtain a copy of the License at
       http://www.apache.org/licenses/LICENSE-2.0
   Unless required by applicable law or agreed to in writing, software
   distributed under the License is distributed on an "AS IS" BASIS,
```

```
   WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
   See the License for the specific language governing permissions and
   limitations under the License.
The above license applies to all contributions after 2017-12-01, as well as
all contributions that have been re-licensed (see AUTHORS file for the list of
contributors who have re-licensed their code).

dateutil - Extensions to the standard Python datetime module.
Copyright (c) 2003-2011 - Gustavo Niemeyer <gustavo@niemeyer.net>
Copyright (c) 2012-2014 - Tomi Pieviläinen <tomi.pievilainen@iki.fi>
Copyright (c) 2014-2016 - Yaron de Leeuw <me@jarondl.net>
Copyright (c) 2015-     - Paul Ganssle <paul@ganssle.io>
Copyright (c) 2015-     - dateutil contributors (see AUTHORS file)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    * Redistributions of source code must retain the above copyright notice,
      this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright notice,
      this list of conditions and the following disclaimer in the documentation
      and/or other materials provided with the distribution.
    * Neither the name of the copyright holder nor the names of its
      contributors may be used to endorse or promote products derived from
      this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The above BSD License Applies to all code, even that also covered by Apache 2.0.
--------------------------------------------------------------------------------

scikit-learn
------------
Copyright (c) 2007-2024 The scikit-learn developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

scipy
-----
Copyright (c) 2001-2002 Enthought, Inc. 2003-2024, SciPy Developers.
```

```
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-----------------------------------------------------------------------

six
---
Copyright (c) 2010-2020 Benjamin Peterson
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
-------------------------------------------------------------------------------

threadpoolctl
-------------
Copyright (c) 2019, threadpoolctl contributors
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    * Redistributions of source code must retain the above copyright notice,
      this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of copyright holder nor the names of its contributors
      may be used to endorse or promote products derived from this software
      without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
```

```
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-------------------------------------------------------------------------------

zipp
----
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.

packaging
---------
This software is made available under the terms of *either* of the
licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this
software is made under the terms of *both* these licenses.
Copyright (c) Donald Stufft and individual contributors.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

==========
==========

pytorch

```
PyTorch
------------------------------------------------
Copyright (c) 2016-     Facebook, Inc            (Adam Paszke)
Copyright (c) 2014-     Facebook, Inc            (Soumith Chintala)
Copyright (c) 2011-2014 Idiap Research Institute (Ronan Collobert)
Copyright (c) 2012-2014 Deepmind Technologies    (Koray Kavukcuoglu)
Copyright (c) 2011-2012 NEC Laboratories America (Koray Kavukcuoglu)
Copyright (c) 2011-2013 NYU                      (Clement Farabet)
Copyright (c) 2006-2010 NEC Laboratories America (Ronan Collobert,
Leon Bottou, Iain Melvin, Jason Weston)
Copyright (c) 2006      Idiap Research Institute (Samy Bengio)
Copyright (c) 2001-2004 Idiap Research Institute (Ronan Collobert,
Samy Bengio, Johnny Mariethoz)
```

```
From Caffe2:
Copyright (c) 2016-present, Facebook Inc. All rights reserved.
All contributions by Facebook:
Copyright (c) 2016 Facebook Inc.
All contributions by Google:
Copyright (c) 2015 Google Inc.
All rights reserved.
All contributions by Yangqing Jia:
Copyright (c) 2015 Yangqing Jia
All rights reserved.
All contributions by Kakao Brain:
Copyright 2019-2020 Kakao Brain
All contributions from Caffe:
Copyright(c) 2013, 2014, 2015, the respective contributors
All rights reserved.
All other contributions:
Copyright(c) 2015, 2016 the respective contributors
All rights reserved.
Caffe2 uses a copyright model similar to Caffe: each contributor holds
copyright over their contributions to Caffe2. The project versioning records
all such contribution and copyright details. If a contributor wants to further
mark their specific copyright on a particular contribution, they should
indicate their copyright solely in the commit message of the change when it is
committed.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. Neither the names of Facebook, Deepmind Technologies, NYU,
NEC Laboratories America
   and IDIAP Research Institute nor the names of its contributors may be
   used to endorse or promote products derived from this software without
   specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

4th Party Dependencies
----------------------
Software libraries under third_party are provided as github submodule
links, and their content is not part of the Caffe2 codebase. Their
licences can be found under the respective software repositories.

Earlier BSD License
-------------------
Early development of Caffe2 in 2015 and early 2016 is licensed under the
BSD license. The license is attached below:
All contributions by Facebook:
Copyright (c) 2016 Facebook Inc.
All contributions by Google:
Copyright (c) 2015 Google Inc.
All rights reserved.
All contributions by Yangqing Jia:
Copyright (c) 2015 Yangqing Jia
All rights reserved.
```

```
All contributions by Kakao Brain:
Copyright 2019-2020 Kakao Brain
All other contributions:
Copyright(c) 2015, 2016 the respective contributors
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Caffe's BSD License
Some parts of the caffe2 code is derived from the original Caffe code, which is
created by Yangqing Jia and is now a BSD-licensed open-source project. The Caffe
license is as follows:
All contributions by the University of California:
Copyright (c) 2014, The Regents of the University of California (Regents)
All rights reserved.
All other contributions:
Copyright (c) 2014, the respective contributors
All rights reserved.
Caffe uses a shared copyright model: each contributor holds copyright over
their contributions to Caffe. The project versioning records all such
contribution and copyright details. If a contributor wants to further mark
their specific copyright on a particular contribution, they should indicate
their copyright solely in the commit message of the change when it is
committed.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

CONTRIBUTION AGREEMENT
By contributing to the BVLC/caffe repository through pull-request, comment,
or otherwise, the contributor releases their content to the
license and copyright terms herein.

This repo contains Caffe2 code, which was previously licensed under
Apache License Version 2.0:

                                 Apache License
```

```
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

Code derived from implementations in the Cephes Math Library should mention
its derivation and reference the following license:
   3-Clause BSD License for the Cephes Math Library
   Copyright (c) 2018, Steven Moshier
   All rights reserved.
   Redistribution and use in source and binary forms, with or without
   modification, are permitted provided that the following conditions are met:
   * Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
   * Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
   * Neither the name of the nor the
   names of its contributors may be used to endorse or promote products
   derived from this software without specific prior written permission.
   THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
   ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
   WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
   DISCLAIMED. IN NO EVENT SHALL Steven Moshier BE LIABLE FOR ANY
   DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
   (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
   LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
   ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
   (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
   SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code derived from implementations in SciPy should mention its derivation
and reference the following license:
   Copyright (c) 2001-2002 Enthought, Inc.  2003-2019, SciPy Developers.
   All rights reserved.
   Redistribution and use in source and binary forms, with or without
   modification, are permitted provided that the following conditions
   are met:
   1. Redistributions of source code must retain the above copyright
     notice, this list of conditions and the following disclaimer.
   2. Redistributions in binary form must reproduce the above
     copyright notice, this list of conditions and the following
     disclaimer in the documentation and/or other materials provided
     with the distribution.
   3. Neither the name of the copyright holder nor the names of its
     contributors may be used to endorse or promote products derived
     from this software without specific prior written permission.
   THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
   "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
   LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
   A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
   OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
   SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
   LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
   DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
   THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
   (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
   OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code derived from implementations in Boost 1.0 should mention its
derivation and reference the following license:
   Boost Software License - Version 1.0 - August 17th, 2003
   Permission is hereby granted, free of charge, to any person or organization
   obtaining a copy of the software and accompanying documentation covered by
   this license (the "Software") to use, reproduce, display, distribute,
   execute, and transmit the Software, and to prepare derivative works of the
```

```
   Software, and to permit third-parties to whom the Software is furnished to
   do so, all subject to the following:
   The copyright notices in the Software and this entire statement, including
   the above license grant, this restriction and the following disclaimer,
   must be included in all copies of the Software, in whole or in part, and
   all derivative works of the Software, unless such copies or derivative
   works are solely in the form of machine-executable object code generated by
   a source language processor.
   THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
   IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
   FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
   SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
   FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
   ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
   DEALINGS IN THE SOFTWARE.

Code derived from implementations in PILLOW-SIMD should mention its derivation
and reference the following license:
    The Python Imaging Library (PIL) is
        Copyright © 1997-2011 by Secret Labs AB
        Copyright © 1995-2011 by Fredrik Lundh
    Pillow is the friendly PIL fork. It is
        Copyright © 2010-2022 by Alex Clark and contributors
    Like PIL, Pillow is licensed under the open source HPND License:
    By obtaining, using, and/or copying this software and/or its associated
    documentation, you agree that you have read, understood, and will comply
    with the following terms and conditions:
    Permission to use, copy, modify, and distribute this software and its
    associated documentation for any purpose and without fee is hereby granted,
    provided that the above copyright notice appears in all copies, and that
    both that copyright notice and this permission notice appear in supporting
    documentation, and that the name of Secret Labs AB or the author not be
    used in advertising or publicity pertaining to distribution of the software
    without specific, written prior permission.
    SECRET LABS AB AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS
    SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS.
    IN NO EVENT SHALL SECRET LABS AB OR THE AUTHOR BE LIABLE FOR ANY SPECIAL,
    INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM
    LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE
    OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
    PERFORMANCE OF THIS SOFTWARE.
----------------------------------------------------------------------------

typing_extensions
-----------------
Python Software Foundation license, version 2
A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section
----------------------------------------------------------------------------

dataclasses:
-----------
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

astunparse
----------
Copyright (c) 2014, Simon Percivall
All rights reserved.
Redistribution and use in source and binary forms,
with or without modification, are permitted provided that the
following conditions are met:
* Redistributions of source code must retain the above copyright
```

```
notice, this list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials
provided with the distribution.
* Neither the name of AST Unparser nor the names of its
contributors may be used to endorse or promote products
derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2
--------------------------------------------
1. This LICENSE AGREEMENT is between the Python Software Foundation
("PSF"), and the Individual or Organization ("Licensee") accessing and
otherwise using this software ("Python") in source or binary form and
its associated documentation.
2. Subject to the terms and conditions of this License Agreement, PSF hereby
grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce,
analyze, test, perform and/or display publicly, prepare derivative works,
distribute, and otherwise use Python alone or in any derivative version,
provided, however, that PSF's License Agreement and PSF's notice of copyright,
i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010,
2011, 2012, 2013, 2014 Python Software Foundation; All Rights Reserved" are retained
in Python alone or in any derivative version prepared by Licensee.
3. In the event Licensee prepares a derivative work that is based on
or incorporates Python or any part thereof, and wants to make
the derivative work available to others as provided herein, then
Licensee hereby agrees to include in any such work a brief summary of
the changes made to Python.
4. PSF is making Python available to Licensee on an "AS IS"
basis.  PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND
DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT
INFRINGE ANY THIRD PARTY RIGHTS.
5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON
FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS
A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON,
OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material
breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any
relationship of agency, partnership, or joint venture between PSF and
Licensee.  This License Agreement does not grant permission to use PSF
trademarks or trade name in a trademark sense to endorse or promote
products or services of Licensee, or any third party.
8. By copying, installing or otherwise using Python, Licensee
agrees to be bound by the terms and conditions of this License
Agreement.

future
------
Copyright (c) 2013-2016 Python Charmers Pty Ltd, Australia
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
```

```
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.

numpy:
-----
Copyright (c) 2005-2021, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

https://github.com/numpy/numpy/blob/main/LICENSES_bundled.txt
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: tempita
Files: tools/npy_tempita/*
License: MIT
  For details, see tools/npy_tempita/license.txt

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib

For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt
```

```
The following software, include the ones above, is
bundled/embedded with numpy - their licenses follow in order:
OpenBLAS
lapack-lite
tempita
dragon4
libdivide
SPLITMIX64
SFC64
PHILOX
PCG64
MT19937
Julia
Random
nympy.core.ma

Name: OpenBLAS
Files: .libs/libopenb*.so
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
--------------------------------------------------------------------------------

Name: LAPACK
Files: .libs/libopenb*.so
Description: bundled in OpenBLAS
License: 3-clause BSD
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
```

```
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-----------------------------------------------------------------------------

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt
Copyright (c) 1992-2022 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2022 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2022 The University of Colorado Denver.  All rights
                        reserved.

Additional copyrights may follow
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
```

```
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
--------------------------------------------------------------------------------

Name: tempita
Files: tools/npy_tempita/*
License: MIT
  For details, see tools/npy_tempita/license.txt
Copyright (c) 2022 Ian Bicking and Contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
--------------------------------------------------------------------------------

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c
dragon4
  Copyright (c) 2022 Ryan Juckett
  Permission is hereby granted, free of charge, to any person obtaining a copy
  of this software and associated documentation files (the "Software"), to
  deal in the Software without restriction, including without limitation the
  rights to use, copy, modify, merge, publish, distribute, sublicense, andor
  sell copies of the Software, and to permit persons to whom the Software is
  furnished to do so, subject to the following conditions:
  The above copyright notice and this permission notice shall be included in
  all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
  IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
  FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
  AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
  LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
  FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
  IN THE SOFTWARE.
--------------------------------------------------------------------------------

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt
zlib License
  Copyright (C) 2010 - 2022 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2022 Kim Walisch, <kim.walisch@gmail.com>
  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.
  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:
  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
```

```
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.
--------------------------------------------------------------------------------

Name: SPLITMIX64
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: Sebastiano Vigna © 2005–2019 NumPy Developers,
Licensed under the 3-clause BSD License.
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all
copyright and related and neighboring rights to this software to the
public domain worldwide. This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.
--------------------------------------------------------------------------------

Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
License: MIT
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
--------------------------------------------------------------------------------

Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: D. E. Shaw Research
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
   - Redistributions of source code must retain the above
   copyright notice, this list of conditions, and the following
   disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions, and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
    - Neither the name of D. E. Shaw Research nor the names of
    its contributors may be used to endorse or promote products
    derived from this software without specific prior written
    permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
```

```
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
--------------------------------------------------------------------------
Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons
to whom the Software is furnished to do so, subject to the
following conditions:
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT
OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
--------------------------------------------------------------------------

Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the
original design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
   -  Redistributions of source code must retain the above
   copyright notice, this list of conditions and the following
   disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - The names of its contributors may not be used to endorse
    or promote products derived from this software without
    specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING,
BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO
EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
```

```
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval
function from Richard J. Wagner's implementation of the
Mersenne Twister RNG, optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons
to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice
shall be included in all copies or substantial portions
of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED
TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
----------------------------------------------------------------------------

Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: Jeff Bezanson, Stefan Karpinski, Viral B. Shah,
and other contributors
For license text,
see/numpy/blob/numpy/random/src/distributions/LICENSE.md
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.
----------------------------------------------------------------------

Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA
Open Source License (NCSA) and The 3-Clause BSD License
For license text, see/numpy/blob/numpy/random/LICENSE.md
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
```

```
to deal with the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimers.
Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimers in the
documentation and/or other materials provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of any contributors
may be used to endorse or promote products derived from this Software without specific prior written permissio
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR
ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.
3-Clause BSD License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
    - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
    - Redistributions in binary form must reproduce the above
    copyright notice, this list of conditions and the following
    disclaimer in the documentation and/or other materials
    provided with the distribution.
   - Neither the name of the copyright holder nor the names of
   its contributors may be used to endorse or promote products
   derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original sources,
often the algorithm's designer. Component licenses are located with
the component code.

Name: nympy.core.ma
Files: /numpy/blob/numpy/ma/*
License: University of Georgia and Pierre G.F. Gerard-Marchant
For license text, see /numpy/blob/numpy/ma/LICENSE
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
```

```
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

psutil:
------
BSD 3-Clause License
Copyright (c) 2009, Jay Loden, Dave Daeschler, Giampaolo Rodola'
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name of the psutil authors nor the names of its contributors
   may be used to endorse or promote products derived from this software without
   specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

pyyaml
------
Copyright (c) 2017-2021 Ingy döt Net
Copyright (c) 2006-2016 Kirill Simonov
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

requests
--------
Copyright 2019 Kenneth Reitz
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

setuptools
```

```
----------
Copyright Jason R. Coombs
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.

six
---
Copyright (c) 2010-2020 Benjamin Peterson
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

filelock
--------
copyright: 2014-2024, tox-dev
This is free and unencumbered software released into the public domain.
Anyone is free to copy, modify, publish, use, compile, sell, or
distribute this software, either in source code form or as a compiled
binary, for any purpose, commercial or non-commercial, and by any
means.
In jurisdictions that recognize copyright laws, the author or authors
of this software dedicate any and all copyright interest in the
software to the public domain. We make this dedication for the benefit
of the public at large and to the detriment of our heirs and
successors. We intend this dedication to be an overt act of
relinquishment in perpetuity of all present and future rights to this
software under copyright law.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.
For more information, please refer to <http://unlicense.org>

sympy
-----
Copyright (c) 2006-2023 SymPy Development Team
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
```

```
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of SymPy nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

Patches that were taken from the Diofant project (https://github.com/diofant/diofant)
are licensed as:
Copyright (c) 2006-2018 SymPy Development Team,
              2013-2023 Sergey B Kirpichev
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of Diofant or SymPy nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

Submodules taken from the multipledispatch project (https://github.com/mrocklin/multipledispatch)
are licensed as:
Copyright (c) 2014 Matthew Rocklin
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of multipledispatch nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
```

```
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

The files under the directory sympy/parsing/autolev/tests/pydy-example-repo
are directly copied from PyDy project and are licensed as:

Copyright (c) 2009-2023, PyDy Authors
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in the
  documentation and/or other materials provided with the distribution.
* Neither the name of this project nor the names of its contributors may be
  used to endorse or promote products derived from this software without
  specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL PYDY AUTHORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The files under the directory sympy/parsing/latex
are directly copied from latex2sympy project and are licensed as:
Copyright 2016, latex2sympy
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

networkx
--------
NetworkX is distributed with the 3-clause BSD license.
::
   Copyright (C) 2004-2024, NetworkX Developers
   Aric Hagberg <hagberg@lanl.gov>
   Dan Schult <dschult@colgate.edu>
   Pieter Swart <swart@lanl.gov>
   All rights reserved.
   Redistribution and use in source and binary forms, with or without
   modification, are permitted provided that the following conditions are
   met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
```

```
      with the distribution.
    * Neither the name of the NetworkX Developers nor the names of its
      contributors may be used to endorse or promote products derived
      from this software without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

fsspec
------
Copyright (c) 2018, Martin Durant
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Jinja2
------
Copyright 2007 Pallets
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
1.  Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
2.  Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
    documentation and/or other materials provided with the distribution.
3.  Neither the name of the copyright holder nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
================================================================================
================================================================================
```

rapidhash

```
/*
 * rapidhash - Very fast, high quality, platform independant hashing algorithm.
 * Copyright (C) 2024 Nicolas De Carli
 *
 * Based on 'wyhash', by Wang Yi <godspeed_china@yeah.net>
 *
 * BSD 2-Clause License (https://www.opensource.org/licenses/bsd-license.php)

 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions are
 * met:
 *
 *    * Redistributions of source code must retain the above copyright
 *      notice, this list of conditions and the following disclaimer.
 *    * Redistributions in binary form must reproduce the above
 *      copyright notice, this list of conditions and the following disclaimer
 *      in the documentation and/or other materials provided with the
 *      distribution.
 *
 * THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
 * "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
 * LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
 * A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
 * OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
 * SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
 * LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
 * DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
 * THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
 * OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 *
 * You can contact the author at:
 *   - rapidhash source repository: https://github.com/Nicoshev/rapidhash

 */
```

```
================================================================================
================================================================================
```

requests

```
Copyright 2019 Kenneth Reitz

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

4th Party Dependencies
----------------------

urllib3
-------
Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
```

```
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

certifi
-------
This package contains a modified version of ca-bundle.crt:
ca-bundle.crt -- Bundle of CA Root Certificates
Certificate data from Mozilla as of: Thu Nov  3 19:04:19 2011#
This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt).  This file can be found in the mozilla source tree:
https://hg.mozilla.org/mozilla-central/file/tip/security/nss/lib/ckfw/builtins/certdata.txt
It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php_curl, or with
an Apache+mod_ssl webserver for SSL client authentication.
Just configure this file as the SSLCACertificateFile.#
***** BEGIN LICENSE BLOCK *****
This Source Code Form is subject to the terms of the Mozilla Public License,
v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain
one at http://mozilla.org/MPL/2.0/.
***** END LICENSE BLOCK *****
@(#) $RCSfile: certdata.txt,v $ $Revision: 1.80 $ $Date: 2011/11/03 15:11:58 $
A copy of the Mozilla Public License 2.0  license can be found
in the 'Standard Licenses' section

idna
----
Copyright (c) 2013-2021, Kim Davies All rights reserved.
Redistribution and use in source and binary forms,
with or without modification, are permitted provided that the following conditions are met:
- Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
- Neither the name of the copyright holder nor the names of its contributors
may be used to endorse or promote products derived from this software without
specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

charset-normalizer
------------------
Copyright (c) 2019 TAHRI Ahmed R.
Permission is hereby granted, free of charge, to any person obtaining a copy
```

```
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
```

```
========================================================================
========================================================================
```

scikit-learn

```
Copyright (c) 2007-2024 The scikit-learn developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

scikit-learn has dependencies on following libraries:
 scikit-learn needs "joblib"
  "joblib" doesn't have any dependencies
 scikit-learn needs "numpy"
  "numpy" has bundled license that are included below
 scikit-learn needs "scipy"
  "scipy" needs "numpy"
   "numpy" has bundled license that are included below
 scikit-learn needs "threadpoolctl"
  "threadpoolctl" doesn't have any dependencies

joblib
------
Copyright (c) 2008-2021, The joblib developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
```

```
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


_____________________________________________________________________________

numpy
-----
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSES_bundled.txt
--------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
$COPYRIGHT$
Additional copyrights may follow
$HEADER$
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
```

```
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: dragon4
Files: numpy/_core/src/multiarray/dragon4.c
License: MIT
/*
 * Copyright (c) 2014 Ryan Juckett
 *
 * Permission is hereby granted, free of charge, to any person obtaining a copy
 * of this software and associated documentation files (the "Software"), to
 * deal in the Software without restriction, including without limitation the
 * rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
 * sell copies of the Software, and to permit persons to whom the Software is
 * furnished to do so, subject to the following conditions:
 *
 * The above copyright notice and this permission notice shall be included in
 * all copies or substantial portions of the Software.
 *
 * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
 * IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
 * FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
 * AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
 * LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
 * FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
 * IN THE SOFTWARE.
 */
/*
 * This file contains a modified version of Ryan Juckett's Dragon4
 * implementation, obtained from https://www.ryanjuckett.com,
 * which has been ported from C++ to C and which has
 * modifications specific to printing floats in numpy.
 *
 * Ryan Juckett's original code was under the Zlib license; he gave numpy
 * permission to include it under the MIT license instead.
 */

Name: libdivide
Files: numpy/_core/include/numpy/libdivide/*
License: Zlib
    zlib License
  ------------
  Copyright (C) 2010 - 2019 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2019 Kim Walisch, <kim.walisch@gmail.com>
  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
```

```
  arising from the use of this software.
  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:
  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.

Note that the following files are vendored in the repository and sdist but not
installed in built numpy packages:

Name: Meson
Files: vendored-meson/meson/*
License: Apache 2.0
# Copyright 2016 The Meson development team

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004  license can be found
in the 'Standard Licenses' section

Name: spin
Files: .spin/cmds.py
License: BSD-3
  BSD 3-Clause License
Copyright (c) 2021--2022, Scientific Python project
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived from
   this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSES_bundled in different directories:
-----------------------------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: SPLITMIX64
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: Sebastiano Vigna © 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md

Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
License: MIT
```

```
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md

Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: D. E. Shaw Research
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md

Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md

Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md

Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: Jeff Bezanson, Stefan Karpinski, Viral B. Shah, and other contributors
For license text, see/numpy/blob/numpy/random/src/distributions/LICENSE.md

Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA
Open Source License (NCSA) and The 3-Clause BSD License
For license text, see/numpy/blob/numpy/random/LICENSE.md

Name: numpy.core.ma
Files: /numpy/blob/numpy/ma/*
License: University of Georgia and Pierre G.F. Gerard-Marchant
For license text, see /numpy/blob/numpy/ma/LICENSE

RECURSIVE LICENSE Mentioned in  LICENSES_bundled in
different directories (list above)
--------------------------------------------------------------------------------

Name: SPLITMIX64
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated
all copyright and related and neighboring rights to this
software to the public domain worldwide. This software is
distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.

Name: SFC64
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons
to whom the Software is furnished to do so, subject to the
following conditions:
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
```

```
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: PHILOX
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the
following conditions are met:
   - Redistributions of source code must retain the above
   copyright notice, this list of conditions, and the
   following disclaimer.
   -  Redistributions in binary form must reproduce the
   above copyright notice, this list of conditions,
   and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
    - Neither the name of D. E. Shaw Research nor the
    names of its contributors may be used to endorse or
    promote products derived from this software without
    specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE,
EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: PCG64
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any
person obtaining a copy of this software and associated
documentation files (the "Software"), to deal in the
Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute,
sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: MT19937
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the
original design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji
Nishimura, All rights reserved.
Redistribution and use in source and binary forms,
with or without modification, are permitted provided
that the following conditions are met:
   -  Redistributions of source code must retain the
   above copyright notice, this list of conditions and the following disclaimer.
```

```
   -  Redistributions in binary form must reproduce
   the above copyright notice, this list of conditions
   and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
    - The names of its contributors may not be used to
    endorse or promote products derived from this software
    without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY
OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.

Original algorithm for the implementation of rk_interval
function from Richard J. Wagner's implementation of the
Mersenne Twister RNG, optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons
to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice
shall be included in all copies or substantial portions
of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT
OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any
person obtaining a copy of this software and associated
documentation files (the "Software"), to deal in the
Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished
to do so, subject to the following conditions:
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO
THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT
OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH T
```

```
HE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Random
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any
person obtaining a copy of this software and associated
documentation files (the "Software"), to deal with the
Software without restriction, including without
limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the
following conditions:
Redistributions of source code must retain the
above copyright notice, this list of conditions
and the following disclaimers.
Redistributions in binary form must reproduce the
above copyright notice, this list of conditions and
the following disclaimers in the documentation and/or
other materials provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of
any contributors may be used to endorse or promote
products derived from this Software without specific prior
written permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED
TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE CONTRIBUTORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE
USE OR OTHER DEALINGS WITH THE SOFTWARE.

Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with
or without modification, are permitted provided that the
following conditions are met:
    - Redistributions of source code must retain the above
    copyright notice, this list of conditions and the
    following disclaimer.
    - Redistributions in binary form must reproduce the
    above copyright notice, this list of conditions and
    the following disclaimer in the documentation and/or
    other materials provided with the distribution.
   - Neither the name of the copyright holder nor the names
   of its contributors may be used to endorse or promote
   products derived from this software without specific prior
   written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original sources,
often the algorithm's designer. Component licenses are located with
```

```
the component code.

Name: numpy.core.ma
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This distribution of NumPy also bundles the following software:

Name: OpenBLAS
Files: numpy/.dylibs/libscipy_openblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: numpy/.dylibs/libscipy_openblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
```

```
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: libquadmath
Files: numpy/.dylibs/libquadmath*.so
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

package_name: scipy
license_type: BSD License
license_text:
Copyright (c) 2001-2002 Enthought, Inc. 2003-2024, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
```

```
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
The SciPy repository and source distributions bundle a number of libraries that
are compatibly licensed.  We list these here.

Name: Decorator
Files: scipy/_lib/decorator.py
License: 2-clause BSD
# Copyright (c) 2005-2015, Michele Simionato
# All rights reserved.
# Redistribution and use in source and binary forms, with or without
# modification, are permitted provided that the following conditions are
# met:
#   Redistributions of source code must retain the above copyright
#   notice, this list of conditions and the following disclaimer.
#   Redistributions in bytecode form must reproduce the above copyright
#   notice, this list of conditions and the following disclaimer in
#   the documentation and/or other materials provided with the
#   distribution.
# THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
# "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
# LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
# A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
# HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
# INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
# BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
# OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
# ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
# TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
# USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
# DAMAGE.

Name: fast_matrix_market
Files: scipy/io/_fast_matrix_market/*
License: 2-clause BSD
  Copyright (C) 2020-2023 Adam Lugowski
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials provided
with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
```

```
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: pystreambuf
Files: scipy/io/_fast_matrix_market/src/pystreambuf.h
License:
Copyright (c) 2006, The Regents of the University of
3-clause BSD
  // SPDX-License-Identifier: BSD-3-Clause
/*
Based on https://gist.github.com/asford/544323a5da7dddad2c9174490eb5ed06
Original license text
--------------------
This component utilizes components derived from cctbx, available at
http://cci.lbl.gov/cctbx_sources/boost_adaptbx/python_streambuf.h
*** License agreement ***
cctbx Copyright (c) 2006, The Regents of the University of
California, through Lawrence Berkeley National Laboratory (subject to
receipt of any required approvals from the U.S. Dept. of Energy).  All
rights reserved.
Redistribution and use in source and binary forms, with or without
odification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
(3) Neither the name of the University of California, Lawrence Berkeley
National Laboratory, U.S. Dept. of Energy nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER
OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
You are under no obligation whatsoever to provide any bug fixes,
patches, or upgrades to the features, functionality or performance of
the source code ("Enhancements") to anyone; however, if you choose to
make your Enhancements available either publicly, or directly to
Lawrence Berkeley National Laboratory, without imposing a separate
written license agreement for such Enhancements, then you hereby grant
the following license: a  non-exclusive, royalty-free perpetual license
to install, use, modify, prepare derivative works, incorporate into
other computer software, distribute, and sublicense such enhancements or
derivative works thereof, in binary and source code form.
*/

Name: fast_float
Files: scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/fast_float/*
License: MIT
  MIT License
Copyright (c) 2021 The fast_float authors
Permission is hereby granted, free of charge, to any
person obtaining a copy of this software and associated
documentation files (the "Software"), to deal in the
Software without restriction, including without
limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software
```

```
is furnished to do so, subject to the following
conditions:
The above copyright notice and this permission notice
shall be included in all copies or substantial portions
of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED
TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT
SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR
IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ryu
Files: scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/ryu/*
License: BSL-1.0
  Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ID
Files: scipy/linalg/src/id_dist/*
License: 3-clause BSD
  Copyright 2014 by P.-G. Martinsson, V. Rokhlin,
Y. Shkolnisky, and M. Tygert.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
1. Redistributions of source code must retain the above copyright
notice, this list of conditions, and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions, and the following disclaimer in the
documentation and/or other materials provided with the distribution.
3. None of the names of the copyright holders may be used to endorse
or promote products derived from this software without specific prior
written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNERS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
Name: L-BFGS-B
Files: scipy/optimize/lbfgsb/*
License:
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>
BSD license
  From the website for the L-BFGS-B code (from at
http://www.ece.northwestern.edu/~nocedal/lbfgsb.html):
"""
L-BFGS-B is a limited-memory quasi-Newton code for bound-constrained
optimization, i.e. for problems where the only constraints are of the
form l<= x <= u.
"""
This is a Python wrapper (using F2PY) written by David M. Cooke
<cookedm@physics.mcmaster.ca> and released as version 0.9 on April 9, 2004.
The wrapper was slightly modified by Joonas Paalasmaa for the 3.0 version
in March 2012.
License of L-BFGS-B (Fortran code)
==================================
The version included here (in lbfgsb.f) is 3.0 (released April 25, 2011). It was
written by Ciyou Zhu, Richard Byrd, and Jorge Nocedal <nocedal@ece.nwu.edu>. It
carries the following condition for use:
  """
  This software is freely available, but we expect that all publications
  describing work using this software, or all commercial products using it,
  quote at least one of the references given below. This software is released
  under the BSD License.
  References
    * R. H. Byrd, P. Lu and J. Nocedal. A Limited Memory Algorithm for Bound
      Constrained Optimization, (1995), SIAM Journal on Scientific and
      Statistical Computing, 16, 5, pp. 1190-1208.
    * C. Zhu, R. H. Byrd and J. Nocedal. L-BFGS-B: Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (1997),
      ACM Transactions on Mathematical Software, 23, 4, pp. 550 - 560.
    * J.L. Morales and J. Nocedal. L-BFGS-B: Remark on Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (2011),
      ACM Transactions on Mathematical Software, 38, 1.
  """
The Python wrapper
==================
This code uses F2PY (http://cens.ioc.ee/projects/f2py2e/) to generate
the wrapper around the Fortran code.
The Python code and wrapper are copyrighted 2004 by David M. Cooke
<cookedm@physics.mcmaster.ca>.
Example usage
=============
An example of the usage is given at the bottom of the lbfgsb.py file.
Run it with 'python lbfgsb.py'.
License for the Python wrapper
==============================
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
```

```
Name: LAPJVsp
Files: scipy/sparse/csgraph/_matching.pyx
License: 3-clause BSD
Copyright 1987-, A. Volgenant/Amsterdam School of Economics,
                 University of Amsterdam
  Distributed under 3-clause BSD license with permission from
  University of Amsterdam.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
     and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
  CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
  ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
  POSSIBILITY OF SUCH DAMAGE.


Name: SuperLU
Files: scipy/sparse/linalg/dsolve/SuperLU/*
License: 3-clause BSD
  Copyright (c) 2003, The Regents of the University of California, through
Lawrence Berkeley National Laboratory (subject to receipt of any required
approvals from U.S. Dept. of Energy)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
(3) Neither the name of Lawrence Berkeley National Laboratory, U.S. Dept. of
Energy nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ARPACK
Files: scipy/sparse/linalg/eigen/arpack/ARPACK/*
License: 3-clause BSD
BSD Software License
Pertains to ARPACK and P_ARPACK
Copyright (c) 1996-2008 Rice University.
Developed by D.C. Sorensen, R.B. Lehoucq, C. Yang, and K. Maschhoff.
All rights reserved.
```

```
Arpack has been renamed to arpack-ng.
Copyright (c) 2001-2011 - Scilab Enterprises
Updated by Allan Cornet, Sylvestre Ledru.
Copyright (c) 2010 - Jordi Gutiérrez Hermoso (Octave patch)
Copyright (c) 2007 - Sébastien Fabbro (gentoo patch)
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Qhull
Files: scipy/spatial/qhull/*
License: Qhull license (BSD-like)
                     Qhull, Copyright (c) 1993-2019
                           C.B. Barber
                          Arlington, MA
                              and
       The National Science and Technology Research Center for
        Computation and Visualization of Geometric Structures
                          (The Geometry Center)
                         University of Minnesota
                         email: qhull@qhull.org
This software includes Qhull from C.B. Barber and The Geometry Center.
Qhull is copyrighted as noted above.  Qhull is free software and may
be obtained via http from www.qhull.org.  It may be freely copied, modified,
and redistributed under the following conditions:
1. All copyright notices must remain intact in all files.
2. A copy of this text file must be distributed along with any copies
   of Qhull that you redistribute; this includes copies that you have
   modified, or copies of programs or other software products that
   include Qhull.
3. If you modify Qhull, you must include a notice giving the
   name of the person performing the modification, the date of
   modification, and the reason for such modification.
4. When distributing modified versions of Qhull, or other software
   products that include Qhull, you must provide notice that the original
   source code may be obtained as noted above.
5. There is no warranty or other guarantee of fitness for Qhull, it is
   provided solely "as is".  Bug reports or fixes may be sent to
   qhull_bug@qhull.org; the authors may or may not act on them as
   they desire.

Name: Cephes
Files: scipy/special/cephes/*
License: 3-clause BSD
  Distributed under 3-clause BSD license with permission from the author,
  see https://lists.debian.org/debian-legal/2004/12/msg00295.html
  Cephes Math Library Release 2.8:  June, 2000
```

```
  Copyright 1984, 1995, 2000 by Stephen L. Moshier
  This software is derived from the Cephes Math Library and is
  incorporated herein by permission of the author.
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
      * Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
      * Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in the
        documentation and/or other materials provided with the distribution.
      * Neither the name of the <organization> nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
  DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
  (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
  LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
  ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
  SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Faddeeva
Files: scipy/special/Faddeeva.*
License: MIT
  Copyright (c) 2012 Massachusetts Institute of Technology
  Permission is hereby granted, free of charge, to any person obtaining
  a copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
  distribute, sublicense, and/or sell copies of the Software, and to
  permit persons to whom the Software is furnished to do so, subject to
  the following conditions:
  The above copyright notice and this permission notice shall be
  included in all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
  EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
  NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
  LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
  OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
  WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: qd
Files: scipy/special/cephes/dd_*.[ch]
License: modified BSD license ("BSD-LBNL-License.doc")
  Copyright (c) 2003-2009, The Regents of the University of California,
  through Lawrence Berkeley National Laboratory (subject to receipt of
  any required approvals from U.S. Dept. of Energy) All rights reserved.
  This work was supported by the Director, Office of Science, Division
  of Mathematical, Information, and Computational Sciences of the
  U.S. Department of Energy under contract numbers DE-AC03-76SF00098 and
  DE-AC02-05CH11231.
  1. Redistribution and use in source and binary forms, with or
  without modification, are permitted provided that the following
  conditions are met:
  (1) Redistributions of source code must retain the copyright
  notice, this list of conditions and the following disclaimer.
  (2) Redistributions in binary form must reproduce the copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.
  (3) Neither the name of the University of California, Lawrence
```

```
  Berkeley National Laboratory, U.S. Dept. of Energy nor the names
  of its contributors may be used to endorse or promote products
  derived from this software without specific prior written
  permission.
  2. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
  3. You are under no obligation whatsoever to provide any bug fixes,
  patches, or upgrades to the features, functionality or performance of
  the source code ("Enhancements") to anyone; however, if you choose to
  make your Enhancements available either publicly, or directly to
  Lawrence Berkeley National Laboratory, without imposing a separate
  written license agreement for such Enhancements, then you hereby grant
  the following license: a non-exclusive, royalty-free perpetual license
  to install, use, modify, prepare derivative works, incorporate into
  other computer software, distribute, and sublicense such enhancements
  or derivative works thereof, in binary and source code form.

Name: pypocketfft
Files: scipy/fft/_pocketfft/[pocketfft.h, pypocketfft.cxx]
License: 3-Clause BSD
  Copyright (C) 2010-2019 Max-Planck-Society
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice, this
  list of conditions and the following disclaimer in the documentation and/or
  other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its contributors may
  be used to endorse or promote products derived from this software without
  specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: uarray
Files: scipy/_lib/uarray/*
License: 3-Clause BSD
  BSD 3-Clause License
Copyright (c) 2018, Quansight-Labs
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
```

```
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ampgo
Files: benchmarks/benchmarks/go_benchmark_functions/*.py
License: MIT
  Functions for testing global optimizers, forked from the AMPGO project,
  https://code.google.com/archive/p/ampgo
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: pybind11
Files: no source files are included, however pybind11 binary artifacts are
  included with every binary build of SciPy.
License:
  Copyright (c) 2016 Wenzel Jakob <wenzel.jakob@epfl.ch>, All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice, this
     list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
     and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
  FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: HiGHS
Files: scipy/optimize/_highs/*
License: MIT
  MIT License
Copyright (c) 2024 HiGHS
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
```

```
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: Boost
Files: scipy/_lib/boost_math/*
License: Boost Software License - Version 1.0
  Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: Biasedurn
Files: scipy/stats/biasedurn/*
License 3-Clause BSD
   The C++ code for these distributions without binding to the R project
are available here:
https://www.agner.org/random/stocc.zip
permission to use it in SciPy under the new BSD license.
By Agner Fog. Technical University of Denmark
copyright: 2008 - 2014. GNU General Public License

Name: UNU.RAN
Files: scipy/_lib/unuran/*
License 3-Clause BSD
copyright by Renee Touzin
  Permission was granted on 23 March 2021 by Josef Leydold
  (josef.leydold@wu.ac.at) and Wolfgang Hoermann (hormannw@bound.edu.tr)
to use the UNU.RAN code excluding the uniform random number generator
in src/uniform/mrg31k3p.c (copyright by Renee Touzin)
under the BSD licence.

Name: NumPy
Files: scipy/stats/_rcont/[logfactorial.h,logfactorial.c]
License 3-Clause BSD
  Copyright (c) 2005-2022, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
```

```
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: array-api-compat
Files: scipy/_lib/array-api-compat/*
License: MIT
 MIT License
Copyright (c) 2022 Consortium for Python Data API Standards
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: Tempita
Files: scipy/_build_utils/tempita/*
License: MIT
Copyright (c) 2008 Ian Bicking and Contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This distribution of SciPy also bundles the following software:

Name: OpenBLAS
Files: scipy/.dylibs/libopenblas*.so
Description: bundled as a dynamically linked library
```

```
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: scipy/.dylibs/libopenblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
```

```
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: libquadmath
Files: scipy/.dylibs/libquadmath*.so
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

package_name: threadpoolctl
license_type: BSD License
license_text:
Copyright (c) 2019, threadpoolctl contributors
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    * Redistributions of source code must retain the above copyright notice,
      this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of copyright holder nor the names of its contributors
      may be used to endorse or promote products derived from this software
      without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
================================================================================
================================================================================
```

scikit-surprise

```
Copyright (c) 2016, Nicolas Hug All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
- Neither the name of the copyright holder nor the names of its
contributors may be used to endorse or promote products derived
from this software without specific prior written permission.
```

```
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.



joblib
------
Copyright (c) 2008-2021, The joblib developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

numpy
-----
Copyright (c) 2005-2025, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
```

```
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

scipy
-----
Copyright (c) 2001-2002 Enthought, Inc. 2003, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
================================================================================
================================================================================
```

scipy

```
Copyright (c) 2001-2002 Enthought, Inc. 2003-2022, SciPy Developers.
All rights reserved.
Jamfile.v2:# Copyright Daryle Walker, Hubert Holin, John Maddock 2006 - 2007
acosh_data.ipp:// Copyright John Maddock 2008.
acosh_test.hpp://  (C) Copyright Hubert Holin 2003.
almost_equal.ipp:// Copyright (c) 2006 Johan Rade
asinh_data.ipp:// Copyright John Maddock 2008.
asinh_test.hpp://  (C) Copyright Hubert Holin 2003.
assoc_legendre_p.ipp://  (C) Copyright John Maddock 2006-7.
atanh_data.ipp:// Copyright John Maddock 2008.
atanh_test.hpp://  (C) Copyright Hubert Holin 2003.
bessel_i_data.ipp://  Copyright (c) 2007 John Maddock
bessel_i_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_large_data.ipp://  Copyright (c) 2007 John Maddock
bessel_k_data.ipp://  Copyright (c) 2007 John Maddock
bessel_k_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_y01_data.ipp://  Copyright (c) 2007 John Maddock
bessel_yn_data.ipp://  Copyright (c) 2007 John Maddock
bessel_yv_data.ipp://  Copyright (c) 2007 John Maddock
beta_exp_data.ipp://  (C) Copyright John Maddock 2006.
beta_med_data.ipp://  (C) Copyright John Maddock 2006.
beta_small_data.ipp://  (C) Copyright John Maddock 2006.
binomial_data.ipp://  (C) Copyright John Maddock 2006-7.
binomial_large_data.ipp://  (C) Copyright John Maddock 2006-7.
binomial_quantile.ipp://  (C) Copyright John Maddock 2006-7.
cbrt_data.ipp://  (C) Copyright John Maddock 2006-7.
common_factor_test.cpp://  (C) Copyright Daryle Walker 2001, 2006.
compile_test/tools_rational_inc_test.cpp://  Copyright John Maddock 2006.
```

```
compile_test/tools_real_cast_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_remez_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_chi_squared_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_complement_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sign_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_digamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_trunc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/constants_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/sf_sinc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_binomial_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_binomial_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_test_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_normal_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sinhc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sin_pi_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sph_harm_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_poisson_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/test_traits.cpp://  Copyright John Maddock 2007.
compile_test/dist_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_cos_pi_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_logistic_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_fpclassify_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_atanh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_precision_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hankel_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/sf_cbrt_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_beta_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_legendre_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_stats_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_polynomial_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_config_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_exponential_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_students_t_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_inv_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_acosh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_beta_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_fisher_f_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_triangular_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/instantiate.hpp://  Copyright John Maddock 2006.
compile_test/instantiate.hpp://  Copyright Paul A. Bristow 2007, 2010.
compile_test/tools_solve_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_next_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/distribution_concept_check.cpp://  Copyright John Maddock 2006.
compile_test/sf_laguerre_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tr1_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_ellint_rj_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_chi_squ_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_skew_norm_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_modf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_find_location_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_acos_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rd_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_roots_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_test_data_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_abs_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_t_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_factorials_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_atan_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_powm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hypot_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_pareto_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_round_incl_test.cpp://  Copyright John Maddock 2006.
```

```
compile_test/dist_weibull_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/std_real_concept_check.cpp://  Copyright John Maddock 2006.
compile_test/dist_hypergeo_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_inv_chi_sq_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sqrt1pm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_log1p_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_jacobi_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/dist_neg_binom_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_f_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_find_scale_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_bessel_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_minima_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_asin_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_extreme_val_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_lanczos_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_uniform_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/test_compile_result.hpp://  Copyright John Maddock 2007.
compile_test/tools_series_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_3_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_2_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hermite_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/poison.hpp://  Copyright John Maddock 2013.
compile_test/sf_zeta_incl_test.cpp://  Copyright John Maddock 2007.
compile_test/dist_laplace_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_expint_incl_test.cpp://  Copyright John Maddock 2007.
compile_test/sf_expm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_bernoulli_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_asinh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_beta_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_fraction_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_owens_t_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/tools_toms748_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_erf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/main.cpp://  Copyright John Maddock 2009.
compile_test/sf_math_fwd_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_airy_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/dist_lognormal_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_cauchy_incl_test.cpp://  Copyright John Maddock 2006.
complex_test.cpp://  (C) Copyright John Maddock 2005.
digamma_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_neg_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_root_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_small_data.ipp://  (C) Copyright John Maddock 2006-7.
e_float_concept_check.cpp://  Copyright John Maddock 2011.
ellint_e2_data.ipp://  Copyright (c) 2006 John Maddock
ellint_e_data.ipp://  Copyright (c) 2006 John Maddock
ellint_f_data.ipp://  Copyright (c) 2006 John Maddock
ellint_k_data.ipp://  (C) Copyright John Maddock 2006-7.
ellint_pi2_data.ipp://  Copyright (c) 2006 John Maddock
ellint_pi3_data.ipp://  Copyright (c) 2006 John Maddock
ellint_pi3_large_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rc_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rd_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rf_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rj_data.ipp://  Copyright (c) 2006 John Maddock
erf_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_large_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_small_data.ipp://  (C) Copyright John Maddock 2006.
erfc_inv_big_data.ipp://  (C) Copyright John Maddock 2006-7.
erfc_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
expint_1_data.ipp://  Copyright John Maddock 2008.
expint_data.ipp://  Copyright John Maddock 2008.
expint_small_data.ipp://  Copyright John Maddock 2008.
expinti_data.ipp://  Copyright John Maddock 2008.
```

```
expinti_data_double.ipp://  Copyright John Maddock 2008.
expinti_data_long.ipp://  Copyright John Maddock 2008.
functor.hpp://  (C) Copyright John Maddock 2007.
gamma_inv_big_data.ipp://  (C) Copyright John Maddock 2006-7.
gamma_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
gamma_inv_small_data.ipp://  (C) Copyright John Maddock 2006-7.
handle_test_result.hpp://  (C) Copyright John Maddock 2006-7.
hermite.ipp://  (C) Copyright John Maddock 2006-7.
hypergeometric_dist_data2.ipp:// Copyright John Maddock 2008
hypergeometric_test_data.ipp:// Copyright Gautam Sewani 2008
hypot_test.cpp://  (C) Copyright John Maddock 2005.
ibeta_data.ipp://  (C) Copyright John Maddock 2006.
ibeta_int_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_inva_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_large_data.ipp://  (C) Copyright John Maddock 2006.
ibeta_small_data.ipp://  (C) Copyright John Maddock 2006.
igamma_big_data.ipp://  (C) Copyright John Maddock 2006.
igamma_int_data.ipp://  (C) Copyright John Maddock 2006-7.
igamma_inva_data.ipp://  (C) Copyright John Maddock 2006-7.
igamma_med_data.ipp://  (C) Copyright John Maddock 2006.
igamma_small_data.ipp://  (C) Copyright John Maddock 2006.
jacobi_elliptic.ipp:// Copyright John Maddock 2012.
jacobi_elliptic_small.ipp:// Copyright John Maddock 2012.
jacobi_large_phi.ipp:// Copyright John Maddock 2012.
jacobi_near_1.ipp:// Copyright John Maddock 2012.
laguerre2.ipp://  (C) Copyright John Maddock 2006-7.
laguerre3.ipp://  (C) Copyright John Maddock 2006-7.
legendre_p.ipp://  (C) Copyright John Maddock 2006-7.
legendre_p_large.ipp://  (C) Copyright John Maddock 2006-7.
log1p_expm1_data.ipp://  (C) Copyright John Maddock 2006-7.
log1p_expm1_test.cpp://  Copyright John Maddock 2005.
log1p_expm1_test.cpp://  Copyright Paul A. Bristow 2010
log1p_expm1_test.hpp://  Copyright John Maddock 2005.
log1p_expm1_test.hpp://  Copyright Paul A. Bristow 2010
mpfr_concept_check.cpp://  Copyright John Maddock 2007-8.
mpreal_concept_check.cpp://  Copyright John Maddock 2007-8.
multiprc_concept_check_1.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_2.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_3.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_4.cpp://  Copyright John Maddock 2013.
ncbeta.ipp://  Copyright John Maddock 2008.
ncbeta_big.ipp://  Copyright John Maddock 2008.
nccs.ipp://  Copyright John Maddock 2008.
nccs_big.ipp:// Copyright John Maddock 2008.
nct.ipp:// Copyright John Maddock 2008.
nct_asym.ipp:// Copyright John Maddock 2012.
nct_small_delta.ipp:// Copyright John Maddock 2012.
negative_binomial_quantile.ipp://  (C) Copyright John Maddock 2006-7.
ntl_concept_check.cpp://  Copyright John Maddock 2007-8.
ntl_concept_check.cpp://  Copyright Paul A. Bristow 2009, 2011
owens_t.ipp://  Copyright John Maddock 2012.
owens_t_T7.hpp:// Copyright (C) Benjamin Sobotta 2012
owens_t_large_data.ipp://  Copyright John Maddock 2012.
pch.hpp://  Copyright John Maddock 2008.
pch_light.hpp://  Copyright John Maddock 2008.
poisson_quantile.ipp://  (C) Copyright John Maddock 2006-7.
pow_test.cpp://  (C) Copyright Bruno Lalande 2008.
powm1_sqrtp1m1_test.cpp://  (C) Copyright John Maddock 2006.
powm1_sqrtp1m1_test.hpp://  Copyright John Maddock 2006.
s_.ipp:// Copyright (c) 2006 Johan Rade
s_.ipp:// Copyright (c) 2012 Paul A. Bristow
sinc_test.hpp://  (C) Copyright Hubert Holin 2003.
sinhc_test.hpp://  (C) Copyright Hubert Holin 2003.
special_functions_test.cpp://  (C) Copyright Hubert Holin 2003.
special_functions_test.cpp:    BOOST_TEST_MESSAGE("(C) Copyright Hubert Holin 2003-2005.");
sph_bessel_data.ipp://  Copyright (c) 2007 John Maddock
```

```
sph_neumann_data.ipp://  Copyright (c) 2007 John Maddock
spherical_harmonic.ipp://  (C) Copyright John Maddock 2006-7.
std_real_concept_check.cpp://  Copyright John Maddock 2006.
table_type.hpp:// Copyright John Maddock 2012.
test_airy.cpp://  Copyright John Maddock 2012
test_archive.cpp:// Copyright (c) 2006 Johan Rade
test_archive.cpp:// Copyright (c) 2011 Paul A. Bristow - filename changes for boost-trunk.
test_basic_nonfinite.cpp:// Copyright (c) 2006 Johan Rade
test_basic_nonfinite.cpp:// Copyright (c) 2011 Paul A. Bristow comments
test_basic_nonfinite.cpp:// Copyright (c) 2011 John Maddock
test_bernoulli.cpp:// Copyright John Maddock 2006.
test_bernoulli.cpp:// Copyright  Paul A. Bristow 2007, 2012.
test_bessel_airy_zeros.cpp://  Copyright John Maddock 2013
test_bessel_airy_zeros.cpp://  Copyright Christopher Kormanyos 2013.
test_bessel_airy_zeros.cpp://  Copyright Paul A. Bristow 2013.
test_bessel_hooks.hpp://  (C) Copyright John Maddock 2007.
test_bessel_i.cpp://  (C) Copyright John Maddock 2007.
test_bessel_i.hpp://  (C) Copyright John Maddock 2007.
test_bessel_j.cpp://  (C) Copyright John Maddock 2007.
test_bessel_j.hpp://  (C) Copyright John Maddock 2007.
test_bessel_k.cpp://  Copyright John Maddock 2006, 2007
test_bessel_k.cpp://  Copyright Paul A. Bristow 2007
test_bessel_k.hpp://  (C) Copyright John Maddock 2007.
test_bessel_y.cpp://  (C) Copyright John Maddock 2007.
test_bessel_y.hpp://  (C) Copyright John Maddock 2007.
test_beta.cpp:// Copyright John Maddock 2006.
test_beta.cpp:// Copyright Paul A. Bristow 2007, 2009
test_beta.hpp:// Copyright John Maddock 2006.
test_beta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_beta_dist.cpp:// Copyright John Maddock 2006.
test_beta_dist.cpp:// Copyright  Paul A. Bristow 2007, 2009, 2010, 2012.
test_beta_hooks.hpp://  (C) Copyright John Maddock 2006.
test_binomial.cpp:// Copyright John Maddock 2006.
test_binomial.cpp:// Copyright  Paul A. Bristow 2007.
test_binomial_coeff.cpp://  (C) Copyright John Maddock 2006.
test_binomial_coeff.hpp:// Copyright John Maddock 2006.
test_binomial_coeff.hpp:// Copyright Paul A. Bristow 2007, 2009
test_carlson.cpp://  Copyright 2006 John Maddock
test_carlson.cpp:// Copyright Paul A. Bristow 2007.
test_carlson.hpp:// Copyright John Maddock 2006.
test_carlson.hpp:// Copyright Paul A. Bristow 2007, 2009
test_cauchy.cpp:// Copyright John Maddock 2006, 2007.
test_cauchy.cpp:// Copyright Paul A. Bristow 2007
test_cbrt.cpp://  Copyright John Maddock 2006.
test_cbrt.cpp://  Copyright Paul A. Bristow 2010
test_cbrt.hpp:// Copyright John Maddock 2006.
test_cbrt.hpp:// Copyright Paul A. Bristow 2007, 2009
test_chi_squared.cpp:// Copyright Paul A. Bristow 2006.
test_chi_squared.cpp:// Copyright John Maddock 2007.
test_classify.cpp://  Copyright John Maddock 2006.
test_classify.cpp://  Copyright Paul A. Bristow 2007
test_common_factor_gmpxx.cpp://  (C) Copyright John Maddock 2010.
test_constant_generate.cpp:// Copyright John Maddock 2010.
test_constants.cpp:// Copyright Paul Bristow 2007, 2011.
test_constants.cpp:// Copyright John Maddock 2006, 2011.
test_digamma.cpp://  (C) Copyright John Maddock 2006.
test_digamma.hpp:// Copyright John Maddock 2006.
test_digamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_dist_overloads.cpp:// Copyright John Maddock 2006.
test_dist_overloads.cpp:// Copyright Paul A. Bristow 2007.
test_ellint_1.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_1.cpp://  Copyright John Maddock 2006, 2007
test_ellint_1.cpp://  Copyright Paul A. Bristow 2007
test_ellint_1.hpp:// Copyright John Maddock 2006.
test_ellint_1.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ellint_2.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_2.cpp://  Copyright John Maddock 2006, 2007
```

```
test_ellint_2.cpp://  Copyright Paul A. Bristow 2007
test_ellint_2.hpp:// Copyright John Maddock 2006.
test_ellint_2.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ellint_3.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_3.cpp://  Copyright John Maddock 2006, 2007
test_ellint_3.cpp://  Copyright Paul A. Bristow 2007
test_ellint_3.hpp:// Copyright John Maddock 2006.
test_ellint_3.hpp:// Copyright Paul A. Bristow 2007, 2009
test_erf.cpp://  Copyright John Maddock 2006.
test_erf.cpp://  Copyright Paul A. Bristow 2007
test_erf.hpp:// Copyright John Maddock 2006.
test_erf.hpp:// Copyright Paul A. Bristow 2007, 2009
test_erf_hooks.hpp://  (C) Copyright John Maddock 2006.
test_error_handling.cpp:// Copyright Paul A. Bristow 2006-7.
test_error_handling.cpp:// Copyright John Maddock 2006-7.
test_expint.cpp://  (C) Copyright John Maddock 2007.
test_expint.hpp:// Copyright John Maddock 2006.
test_expint.hpp:// Copyright Paul A. Bristow 2007, 2009
test_expint_hooks.hpp://  (C) Copyright John Maddock 2006.
test_exponential_dist.cpp:// Copyright John Maddock 2006.
test_exponential_dist.cpp:// Copyright Paul A. Bristow 2007.
test_extreme_value.cpp:// Copyright John Maddock 2006.
test_factorials.cpp://  Copyright John Maddock 2006.
test_find_location.cpp:// Copyright John Maddock 2007.
test_find_location.cpp:// Copyright Paul A. Bristow 2007.
test_find_scale.cpp:// Copyright John Maddock 2007.
test_find_scale.cpp:// Copyright Paul A. Bristow 2007.
test_fisher_f.cpp:// Copyright Paul A. Bristow 2006.
test_fisher_f.cpp:// Copyright John Maddock 2007.
test_fisher_f.cpp:   // Distcalc version 1.2 Copyright 2002 H Lohninger, TU Wein
test_gamma.cpp://  (C) Copyright John Maddock 2006.
test_gamma.hpp:// Copyright John Maddock 2006.
test_gamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_gamma_data.ipp://  (C) Copyright John Maddock 2006.
test_gamma_dist.cpp:// Copyright John Maddock 2006.
test_gamma_dist.cpp:// Copyright Paul A. Bristow 2007, 2010.
test_gamma_hooks.hpp://  (C) Copyright John Maddock 2006.
test_geometric.cpp:// Copyright Paul A. Bristow 2010.
test_geometric.cpp:// Copyright John Maddock 2010.
test_hankel.cpp://  Copyright John Maddock 2012
test_hermite.cpp://  Copyright John Maddock 2006, 2007
test_hermite.cpp://  Copyright Paul A. Bristow 2007
test_hermite.hpp:// Copyright John Maddock 2006.
test_hermite.hpp:// Copyright Paul A. Bristow 2007, 2009
test_hypergeometric_dist.cpp:// Copyright John Maddock 2008
test_hypergeometric_dist.cpp:// Copyright Paul A. Bristow
test_hypergeometric_dist.cpp:// Copyright Gautam Sewani
test_ibeta.cpp://  (C) Copyright John Maddock 2006.
test_ibeta.hpp:// Copyright John Maddock 2006.
test_ibeta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ibeta_inv.cpp://  (C) Copyright John Maddock 2006.
test_ibeta_inv.hpp:// Copyright John Maddock 2006.
test_ibeta_inv.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ibeta_inv_ab.cpp://  (C) Copyright John Maddock 2006.
test_ibeta_inv_ab.hpp:// Copyright John Maddock 2006.
test_ibeta_inv_ab.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma.cpp://  (C) Copyright John Maddock 2006.
test_igamma.hpp:// Copyright John Maddock 2006.
test_igamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma_inv.cpp://  (C) Copyright John Maddock 2006.
test_igamma_inv.hpp:// Copyright John Maddock 2006.
test_igamma_inv.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma_inva.cpp://  (C) Copyright John Maddock 2006.
test_igamma_inva.hpp:// Copyright John Maddock 2006.
test_igamma_inva.hpp:// Copyright Paul A. Bristow 2007, 2009
test_instances/double_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_4.cpp:// Copyright John Maddock 2011.
```

```
test_instances/float_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/Jamfile.v2:# Copyright ohn Maddock 2012
test_instances/real_concept_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/pch.hpp://  Copyright John Maddock 2012.
test_instances/ldouble_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/long_double_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/test_instances.hpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instantiate1.cpp://  Copyright John Maddock 2006.
test_instantiate2.cpp://  Copyright John Maddock 2006.
test_inv_hyp.cpp://  (C) Copyright John Maddock 2006.
test_inverse_chi_squared.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_chi_squared.cpp:// Copyright John Maddock 2010.
test_inverse_chi_squared_distribution.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_chi_squared_distribution.cpp:// Copyright John Maddock 2010.
test_inverse_gamma_distribution.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_gamma_distribution.cpp:// Copyright John Maddock 2010.
test_inverse_gaussian.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_gaussian.cpp:// Copyright John Maddock 2010.
test_jacobi.cpp://  Copyright John Maddock 2012
test_jacobi.hpp:// Copyright John Maddock 2006.
test_jacobi.hpp:// Copyright Paul A. Bristow 2007, 2009
test_laguerre.cpp://  (C) Copyright John Maddock 2006.
test_laguerre.hpp:// Copyright John Maddock 2006.
test_laguerre.hpp:// Copyright Paul A. Bristow 2007, 2009
test_laplace.cpp://  Copyright Thijs van den Berg, 2008.
test_laplace.cpp://  Copyright John Maddock 2008.
test_laplace.cpp://  Copyright Paul A. Bristow 2008, 2009.
test_ldouble_simple.cpp:// Copyright John Maddock 2013.
test_legacy_nonfinite.cpp:// Copyright (c) 2006 Johan Rade
test_legacy_nonfinite.cpp:// Copyright (c) 2011 Paul A. Bristow comments
test_legendre.cpp://  (C) Copyright John Maddock 2006.
test_legendre.hpp:// Copyright John Maddock 2006.
test_legendre.hpp:// Copyright Paul A. Bristow 2007, 2009
```

```
test_legendre_hooks.hpp://  (C) Copyright John Maddock 2006.
test_lexical_cast.cpp:// Copyright (c) 2006 Johan Rade
test_lexical_cast.cpp:// Copyright (c) 2011 Paul A. Bristow incorporated Boost.Math
test_logistic_dist.cpp:// Copyright 2008 Gautam Sewani
test_lognormal.cpp:// Copyright John Maddock 2006.
test_lognormal.cpp:// Copyright Paul A. Bristow 2007
test_long_double_support.cpp:// Copyright John Maddock 2009
test_math_fwd.cpp://  Copyright John Maddock 2010.
test_math_fwd.cpp://  Copyright Paul A. Bristow 2010.
test_minima.cpp://  Copyright John Maddock 2006.
test_minima.cpp://  Copyright Paul A. Bristow 2007.
test_nc_beta.cpp:// Copyright John Maddock 2008.
test_nc_chi_squared.cpp:// Copyright John Maddock 2008.
test_nc_f.cpp:// Copyright John Maddock 2008.
test_nc_t.cpp:// Copyright John Maddock 2008, 2012.
test_nc_t.cpp:// Copyright Paul A. Bristow 2012.
test_ncbeta_hooks.hpp://  (C) Copyright John Maddock 2008.
test_nccs_hooks.hpp://  (C) Copyright John Maddock 2008.
test_negative_binomial.cpp:// Copyright Paul A. Bristow 2007.
test_negative_binomial.cpp:// Copyright John Maddock 2006.
test_next.cpp://  (C) Copyright John Maddock 2008.
test_nonfinite_io.cpp:// Copyright 2011 Paul A. Bristow
test_nonfinite_trap.cpp:// Copyright (c) 2006 Johan Rade
test_nonfinite_trap.cpp:// Copyright (c) 2011 Paul A. Bristow To incorporate into Boost.Math
test_normal.cpp:// Copyright Paul A. Bristow 2010.
test_normal.cpp:// Copyright John Maddock 2007.
test_out_of_range.hpp:// Copyright John Maddock 2012.
test_owens_t.cpp:// Copyright Paul A. Bristow 2012.
test_owens_t.cpp:// Copyright Benjamin Sobotta 2012.
test_pareto.cpp:// Copyright Paul A. Bristow 2007, 2009.
test_pareto.cpp:// Copyright John Maddock 2006.
test_poisson.cpp:// Copyright Paul A. Bristow 2007.
test_poisson.cpp:// Copyright John Maddock 2006.
test_policy.cpp:// Copyright John Maddock 2007.
test_policy_2.cpp:// Copyright John Maddock 2007.
test_policy_3.cpp:// Copyright John Maddock 2007.
test_policy_4.cpp:// Copyright John Maddock 2007.
test_policy_5.cpp:// Copyright John Maddock 2007.
test_policy_6.cpp:// Copyright John Maddock 2007.
test_policy_7.cpp:// Copyright John Maddock 2007.
test_policy_8.cpp:// Copyright John Maddock 2007.
test_policy_sf.cpp://  (C) Copyright John Maddock 2007.
test_print_info_on_type.cpp:// Copyright John Maddock 2010.
test_rational_instances/test_rational_ldouble2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational.hpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float1.cpp://  (C) Copyright John Maddock 2006-7.
test_rationals.cpp://  (C) Copyright John Maddock 2006.
test_rayleigh.cpp:// Copyright John Maddock 2006.
test_real_concept.cpp:// Copyright John Maddock 2010
test_real_concept_neg_bin.cpp:// Copyright Paul A. Bristow 2010.
```

```
test_real_concept_neg_bin.cpp:// Copyright John Maddock 2010.
test_remez.cpp://  Copyright John Maddock 2006
test_remez.cpp://  Copyright Paul A. Bristow 2007
test_roots.cpp://  (C) Copyright John Maddock 2006.
test_round.cpp://  (C) Copyright John Maddock 2007.
test_sign.cpp:#define BOOST_TEST_MAIN// Copyright John Maddock 2008
test_sign.cpp://  (C) Copyright Paul A. Bristow 2011 (added tests for changesign)
test_signed_zero.cpp:// Copyright 2006 Johan Rade
test_signed_zero.cpp:// Copyright 2011 Paul A. Bristow  To incorporate into Boost.Math
test_signed_zero.cpp:// Copyright 2012 Paul A. Bristow with new tests.
test_skew_normal.cpp:// Copyright Paul A. Bristow 2012.
test_skew_normal.cpp:// Copyright John Maddock 2012.
test_skew_normal.cpp:// Copyright Benjamin Sobotta 2012
test_spherical_harmonic.cpp://  (C) Copyright John Maddock 2006.
test_students_t.cpp:// Copyright Paul A. Bristow 2006.
test_students_t.cpp:// Copyright John Maddock 2006.
test_tgamma_ratio.cpp://  (C) Copyright John Maddock 2006.
test_tgamma_ratio.hpp:// Copyright John Maddock 2006.
test_tgamma_ratio.hpp:// Copyright Paul A. Bristow 2007, 2009
test_toms748_solve.cpp://  (C) Copyright John Maddock 2006.
test_tr1.c:/*  (C) Copyright John Maddock 2008.
test_tr1.cpp://  (C) Copyright John Maddock 2008.
test_triangular.cpp:// Copyright Paul Bristow 2006, 2007.
test_triangular.cpp:// Copyright John Maddock 2006, 2007.
test_uniform.cpp:// Copyright Paul Bristow 2007.
test_uniform.cpp:// Copyright John Maddock 2006.
test_weibull.cpp:// Copyright John Maddock 2006, 2012.
test_weibull.cpp:// Copyright Paul A. Bristow 2007, 2012.
test_zeta.cpp://  (C) Copyright John Maddock 2006.
test_zeta.hpp:// Copyright John Maddock 2006.
test_zeta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_zeta_hooks.hpp://  (C) Copyright John Maddock 2006.
tgamma_delta_ratio_data.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_delta_ratio_int.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_delta_ratio_int2.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_ratio_data.ipp://  (C) Copyright John Maddock 2006-7.
zeta_1_below_data.ipp://  Copyright John Maddock 2008.
zeta_1_up_data.ipp://  Copyright John Maddock 2008.
zeta_data.ipp://  Copyright John Maddock 2008.
zeta_neg_data.ipp://  Copyright John Maddock 2008.
ztest_max_digits10.cpp: // Copyright 2010 Paul A. Bristow
zztest_max_digits10.cpp:// Copyright 2010 Paul A. Bristow

Copyright (c) 2001-2002 Enthought, Inc. 2003-2024, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
```

```
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----
This binary distribution of SciPy also bundles the following software:

Name: OpenBLAS
Files: scipy.libs/libopenblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: scipy.libs/libopenblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
```

```
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: libquadmath
Files: scipy.libs/libquadmath*.so
Description: dynamically linked to files compiled with gcc
Availability: https://gcc.gnu.org/git/?p=gcc.git;a=tree;f=libquadmath
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

Bundled License: scipy
The SciPy repository and source distributions bundle a number of libraries that
are compatibly licensed.  We list these here.

Name: Decorator
License: 2-clause BSD
Copyright (c) 2005-2018, Michele Simionato
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
- Redistributions in bytecode form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in
the documentation and/or other materials provided with the
distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

Name: fast_matrix_market
License: 2-clause BSD
Copyright (C) 2020-2023 Adam Lugowski
Redistribution and use in source and binary forms, with or
```

```
without modification, are permitted provided that the following
conditions are met:
1. Redistributions of source code must retain the above
copyright notice, this list of conditions and the following
disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials provided
with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF
THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

Name: pystreambuf
License: 3-clause BSD
cctbx Copyright (c) 2006, The Regents of the University of
California, through Lawrence Berkeley National Laboratory (subject to
receipt of any required approvals from the U.S. Dept. of Energy).  All
rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
(3) Neither the name of the University of California, Lawrence Berkeley
National Laboratory, U.S. Dept. of Energy nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER
OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

You are under no obligation whatsoever to provide any bug fixes,
patches, or upgrades to the features, functionality or performance of
the source code ("Enhancements") to anyone; however, if you choose to
make your Enhancements available either publicly, or directly to
Lawrence Berkeley National Laboratory, without imposing a separate
written license agreement for such Enhancements, then you hereby grant
the following license: a  non-exclusive, royalty-free perpetual license
to install, use, modify, prepare derivative works, incorporate into
other computer software, distribute, and sublicense such enhancements or
derivative works thereof, in binary and source code form.

Name: fast_float
License: MIT
MIT License
Copyright (c) 2021 The fast_float authors
```

```
Permission is hereby granted, free of charge, to any
person obtaining a copy of this software and associated
documentation files (the "Software"), to deal in the
Software without restriction, including without
limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software
is furnished to do so, subject to the following
conditions:
The above copyright notice and this permission notice
shall be included in all copies or substantial portions
of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED
TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT
SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR
IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ryu
License: BSL-1.0
Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ID
License: 3-clause BSD
The present document and all of the software
in the accompanying distribution (which is contained in the directory
id_dist and its subdirectories, or in the file id_dist.tar.gz, is
Copyright (c) 2014 by P.-G. Martinsson, V. Rokhlin,
Y. Shkolnisky, and M. Tygert.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
* Redistributions of source code must retain the above copyright
notice, this list of conditions, and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright
notice, this list of conditions, and the following disclaimer in the
documentation and/or other materials provided with the distribution.
* None of the names of the copyright holders may be used to endorse
or promote products derived from this software without specific prior
written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
```

```
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNERS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: L-BFGS-B
License: BSD license
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
The version included here (in lbfgsb.f) is 3.0 (released April 25, 2011). It was
written by Ciyou Zhu, Richard Byrd, and Jorge Nocedal <nocedal@ece.nwu.edu>. It
carries the following condition for use:
  """
  This software is freely available, but we expect that all publications
  describing work using this software, or all commercial products using it,
  quote at least one of the references given below. This software is released
  under the BSD License.
  References
    * R. H. Byrd, P. Lu and J. Nocedal. A Limited Memory Algorithm for Bound
      Constrained Optimization, (1995), SIAM Journal on Scientific and
      Statistical Computing, 16, 5, pp. 1190-1208.
    * C. Zhu, R. H. Byrd and J. Nocedal. L-BFGS-B: Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (1997),
      ACM Transactions on Mathematical Software, 23, 4, pp. 550 - 560.
    * J.L. Morales and J. Nocedal. L-BFGS-B: Remark on Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (2011),
      ACM Transactions on Mathematical Software, 38, 1.
  """

Name: LAPJVsp
License: 3-clause BSD
Copyright 1987-, A. Volgenant/Amsterdam School of Economics,
                 University of Amsterdam
  Distributed under 3-clause BSD license with permission from
  University of Amsterdam.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
    without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
```

```
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
  CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
  ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
  POSSIBILITY OF SUCH DAMAGE.

Name: SuperLU
License: 3-clause BSD
Copyright (c) 2003, The Regents of the University of California, through
Lawrence Berkeley National Laboratory (subject to receipt of any required
approvals from U.S. Dept. of Energy)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
(3) Neither the name of Lawrence Berkeley National Laboratory, U.S. Dept. of
Energy nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ARPACK
License: 3-clause BSD
Pertains to ARPACK and P_ARPACK
Copyright (c) 1996-2008 Rice University.
Developed by D.C. Sorensen, R.B. Lehoucq, C. Yang, and K. Maschhoff.
All rights reserved.
Arpack has been renamed to arpack-ng.
Copyright (c) 2001-2011 - Scilab Enterprises
Updated by Allan Cornet, Sylvestre Ledru.
Copyright (c) 2010 - Jordi Gutiérrez Hermoso (Octave patch)
Copyright (c) 2007 - Sébastien Fabbro (gentoo patch)
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
```

```
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Qhull
License: Qhull license (BSD-like)
 Qhull, Copyright (c) 1993-2020
C.B. Barber
Arlington, MA
and
The National Science and Technology Research Center for
Computation and Visualization of Geometric Structures
(The Geometry Center)
University of Minnesota
email: qhull@qhull.org
This software includes Qhull from C.B. Barber and The Geometry Center.
Qhull is copyrighted as noted above.  Qhull is free software and may
be obtained via http from www.qhull.org.  It may be freely copied, modified,
and redistributed under the following conditions:
1. All copyright notices must remain intact in all files.
2. A copy of this text file must be distributed along with any copies
   of Qhull that you redistribute; this includes copies that you have
   modified, or copies of programs or other software products that
   include Qhull.
3. If you modify Qhull, you must include a notice giving the
   name of the person performing the modification, the date of
   modification, and the reason for such modification.
4. When distributing modified versions of Qhull, or other software
   products that include Qhull, you must provide notice that the original
   source code may be obtained as noted above.
5. There is no warranty or other guarantee of fitness for Qhull, it is
   provided solely "as is".  Bug reports or fixes may be sent to
   qhull_bug@qhull.org; the authors may or may not act on them as
   they desire.

Name: Cephes
License: 3-clause BSD
Distributed under 3-clause BSD license with permission from the author,
see https://lists.debian.org/debian-legal/2004/12/msg00295.html
Cephes Math Library Release 2.8:  June, 2000
Copyright 1984, 1995, 2000 by Stephen L. Moshier
This software is derived from the Cephes Math Library and is
incorporated herein by permission of the author.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of the <organization> nor the
      names of its contributors may be used to endorse or promote products
      derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Faddeeva
License: MIT
```

```
  Copyright (c) 2012 Massachusetts Institute of Technology
  Permission is hereby granted, free of charge, to any person obtaining
  a copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
  distribute, sublicense, and/or sell copies of the Software, and to
  permit persons to whom the Software is furnished to do so, subject to
  the following conditions:
  The above copyright notice and this permission notice shall be
  included in all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
  EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
  NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
  LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
  OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
  WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: qd
License: modified BSD license ("BSD-LBNL-License.doc")
  This work was supported by the Director, Office of Science, Division
  of Mathematical, Information, and Computational Sciences of the
  U.S. Department of Energy under contract numbers DE-AC03-76SF00098 and
  DE-AC02-05CH11231.
  Copyright (c) 2003-2009, The Regents of the University of California,
  through Lawrence Berkeley National Laboratory (subject to receipt of
  any required approvals from U.S. Dept. of Energy) All rights reserved.
  1. Redistribution and use in source and binary forms, with or
  without modification, are permitted provided that the following
  conditions are met:
  (1) Redistributions of source code must retain the copyright
  notice, this list of conditions and the following disclaimer.
  (2) Redistributions in binary form must reproduce the copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.
  (3) Neither the name of the University of California, Lawrence
  Berkeley National Laboratory, U.S. Dept. of Energy nor the names
  of its contributors may be used to endorse or promote products
  derived from this software without specific prior written
  permission.
  2. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
  3. You are under no obligation whatsoever to provide any bug fixes,
  patches, or upgrades to the features, functionality or performance of
  the source code ("Enhancements") to anyone; however, if you choose to
  make your Enhancements available either publicly, or directly to
  Lawrence Berkeley National Laboratory, without imposing a separate
  written license agreement for such Enhancements, then you hereby grant
  the following license: a non-exclusive, royalty-free perpetual license
  to install, use, modify, prepare derivative works, incorporate into
  other computer software, distribute, and sublicense such enhancements
  or derivative works thereof, in binary and source code form.

Name: pypocketfft
License: 3-Clause BSD
Copyright (C) 2010-2019 Max-Planck-Society All rights reserved.
Redistribution and use in source and binary forms, with or without
```

```
modification, are permitted provided that the following conditions are met:
    Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
    Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
    documentation and/or other materials provided with the distribution.
    Neither the name of the copyright holder nor the names of its
    contributors may be used to endorse or promote products derived
    from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: uarray
License: 3-Clause BSD
Copyright (c) 2018, Quansight-Labs
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ampgo
License: MIT
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: pybind11
```

```
License:
  Copyright (c) 2016 Wenzel Jakob <wenzel.jakob@epfl.ch>, All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice, this
     list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
     and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
  FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: HiGHS
License: MIT
Copyright (c) 2021 ERGO-Code
    IPX and BASICLU, Copyright (c) 2018-2021  ERGO-Code
    Used in HiGHS under the MIT license.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: Boost
License: Boost Software License - Version 1.0
Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.
```

```
Name: Biasedurn
License 3-Clause BSD
---------- Forwarded message ---------
From: Agner Fog <agner@agner.org>
Date: Wed, Jul 22, 2020 at 8:54 PM
Subject: Re: Add BiasedUrn to SciPy?
To: Matt Haberland <mhaberla@calpoly.edu>
Cc: Warren Weckesser <warren.weckesser@gmail.com>
Dear Matt The C++ code for these distributions without binding to the R project
are available here:
https://www.agner.org/random/stocc.zip
You have my permission to use it in SciPy under the new BSD license.
Best regards,
Agner Fog
On 22/07/2020 17.05, Matt Haberland wrote:
Hi Agner, I'm a maintainer of the Python scientific computing library SciPy,
and I'm working on improving the capabilities of our statistics subpackage
scipy.stats. We'd like to add both Fisher's and Wallenius' noncentral
hypergeometric distributions, but these look quite challenging to implement.
We found your BiasedUrn package, and we'd love to wrap it, but we can't
include GPL-3 licensed code under our BSD-new license. Would you consider
re-licensing BiasedUrn under a more permissive license, such as BSD-new or
MIT, so we can include it in SciPy?
Thank you for considering it!
Matt
--
Matt Haberland
Assistant Professor
BioResource and Agricultural Engineering
08A-3K, Cal Poly

Name: UNU.RAN
License 3-Clause BSD
Permission was granted on 23 March 2021 by Josef Leydold
(josef.leydold@wu.ac.at) and Wolfgang Hoermann (hormannw@bound.edu.tr)
to use the UNU.RAN code excluding the uniform random number
generator in src/uniform/mrg31k3p.c (copyright by Renee Touzin)
under the BSD licence. The following files have been removed
from the original library:
    unuran-1.8.1/COPYING
    unuran-1.8.1/INSTALL
    unuran-1.8.1/Makefile.am
    unuran-1.8.1/Makefile.in
    unuran-1.8.1/NEWS
    unuran-1.8.1/UPGRADE
    unuran-1.8.1/acinclude.m4
    unuran-1.8.1/aclocal.m4
    unuran-1.8.1/autoconf/config.guess
    unuran-1.8.1/autoconf/config.sub
    unuran-1.8.1/autoconf/depcomp
    unuran-1.8.1/autoconf/install-sh
    unuran-1.8.1/autoconf/ltmain.sh
    unuran-1.8.1/autoconf/mdate-sh
    unuran-1.8.1/autoconf/missing
    unuran-1.8.1/autogen.sh
    unuran-1.8.1/configure
    unuran-1.8.1/doc/Makefile.am
    unuran-1.8.1/doc/Makefile.in
    unuran-1.8.1/doc/figures/Makefile.am
    unuran-1.8.1/doc/figures/Makefile.in
    unuran-1.8.1/doc/figures/discrete_inversion.eps
    unuran-1.8.1/doc/figures/discrete_inversion.pdf
    unuran-1.8.1/doc/figures/discrete_inversion.png
    unuran-1.8.1/doc/figures/discrete_inversion.txt
    unuran-1.8.1/doc/figures/inversion.eps
    unuran-1.8.1/doc/figures/inversion.pdf
    unuran-1.8.1/doc/figures/inversion.png
```

```
    unuran-1.8.1/doc/figures/inversion.txt
    unuran-1.8.1/doc/figures/rejection_from_constant_hat.eps
    unuran-1.8.1/doc/figures/rejection_from_constant_hat.pdf
    unuran-1.8.1/doc/figures/rejection_from_constant_hat.png
    unuran-1.8.1/doc/figures/rejection_from_constant_hat.txt
    unuran-1.8.1/doc/figures/rou-cauchy.eps
    unuran-1.8.1/doc/figures/rou-cauchy.pdf
    unuran-1.8.1/doc/figures/rou-cauchy.png
    unuran-1.8.1/doc/figures/rou-cauchy.txt
    unuran-1.8.1/doc/figures/texpict2img.pl
    unuran-1.8.1/doc/src/Makefile.am
    unuran-1.8.1/doc/src/Makefile.in
    unuran-1.8.1/doc/src/README
    unuran-1.8.1/doc/src/arvag.dh
    unuran-1.8.1/doc/src/error_debug.dh
    unuran-1.8.1/doc/src/examples.dh
    unuran-1.8.1/doc/src/glossary.dh
    unuran-1.8.1/doc/src/index.dh
    unuran-1.8.1/doc/src/installation.dh
    unuran-1.8.1/doc/src/intro.dh
    unuran-1.8.1/doc/src/make_texi.pl
    unuran-1.8.1/doc/src/methods.dh
    unuran-1.8.1/doc/src/methods_cemp.texi
    unuran-1.8.1/doc/src/methods_cont.texi
    unuran-1.8.1/doc/src/methods_cvec.texi
    unuran-1.8.1/doc/src/methods_cvemp.texi
    unuran-1.8.1/doc/src/methods_discr.texi
    unuran-1.8.1/doc/src/methods_matr.texi
    unuran-1.8.1/doc/src/methods_mcmc.texi
    unuran-1.8.1/doc/src/misc.dh
    unuran-1.8.1/doc/src/ref_example0.texi
    unuran-1.8.1/doc/src/ref_example0_str.texi
    unuran-1.8.1/doc/src/ref_example1.texi
    unuran-1.8.1/doc/src/ref_example1_str.texi
    unuran-1.8.1/doc/src/ref_example2.texi
    unuran-1.8.1/doc/src/ref_example2_str.texi
    unuran-1.8.1/doc/src/ref_example3.texi
    unuran-1.8.1/doc/src/ref_example3_str.texi
    unuran-1.8.1/doc/src/ref_example_FuncStr.texi
    unuran-1.8.1/doc/src/ref_example_anti.texi
    unuran-1.8.1/doc/src/ref_example_anti_str.texi
    unuran-1.8.1/doc/src/ref_example_cext.texi
    unuran-1.8.1/doc/src/ref_example_cont.texi
    unuran-1.8.1/doc/src/ref_example_cont_str.texi
    unuran-1.8.1/doc/src/ref_example_dext.texi
    unuran-1.8.1/doc/src/ref_example_discr.texi
    unuran-1.8.1/doc/src/ref_example_discr_str.texi
    unuran-1.8.1/doc/src/ref_example_emp.texi
    unuran-1.8.1/doc/src/ref_example_emp_str.texi
    unuran-1.8.1/doc/src/ref_example_gsl.texi
    unuran-1.8.1/doc/src/ref_example_mixt.texi
    unuran-1.8.1/doc/src/ref_example_mixt_inv.texi
    unuran-1.8.1/doc/src/ref_example_rngstreams.texi
    unuran-1.8.1/doc/src/ref_example_vemp.texi
    unuran-1.8.1/doc/src/ref_example_win32_1.texi
    unuran-1.8.1/doc/src/ref_example_win32_2.texi
    unuran-1.8.1/doc/src/references.dh
    unuran-1.8.1/doc/src/stddist.dh
    unuran-1.8.1/doc/src/texinfo.tex
    unuran-1.8.1/doc/src/top.dh
    unuran-1.8.1/doc/src/unuran_src.texi
    unuran-1.8.1/doc/stamp-1
    unuran-1.8.1/doc/stamp-vti
    unuran-1.8.1/doc/unuran.html
    unuran-1.8.1/doc/unuran.info
    unuran-1.8.1/doc/unuran.pdf
    unuran-1.8.1/doc/unuran.texi
```

```
    unuran-1.8.1/doc/unuran.txt
    unuran-1.8.1/doc/unuran_win32.html
    unuran-1.8.1/doc/unuran_win32.info
    unuran-1.8.1/doc/unuran_win32.pdf
    unuran-1.8.1/doc/unuran_win32.texi
    unuran-1.8.1/doc/unuran_win32_libname.texi
    unuran-1.8.1/doc/version.texi
    unuran-1.8.1/doc/version_win32.texi
    unuran-1.8.1/examples/Makefile.am
    unuran-1.8.1/examples/Makefile.in
    unuran-1.8.1/examples/example0.c
    unuran-1.8.1/examples/example0_str.c
    unuran-1.8.1/examples/example1.c
    unuran-1.8.1/examples/example1_str.c
    unuran-1.8.1/examples/example2.c
    unuran-1.8.1/examples/example2_str.c
    unuran-1.8.1/examples/example3.c
    unuran-1.8.1/examples/example3_str.c
    unuran-1.8.1/examples/example_FuncStr.c
    unuran-1.8.1/examples/example_anti.c
    unuran-1.8.1/examples/example_anti_str.c
    unuran-1.8.1/examples/example_cext.c
    unuran-1.8.1/examples/example_cont.c
    unuran-1.8.1/examples/example_cont_str.c
    unuran-1.8.1/examples/example_cpp.cpp
    unuran-1.8.1/examples/example_dext.c
    unuran-1.8.1/examples/example_discr.c
    unuran-1.8.1/examples/example_discr_str.c
    unuran-1.8.1/examples/example_emp.c
    unuran-1.8.1/examples/example_emp_str.c
    unuran-1.8.1/examples/example_errorhandler.c
    unuran-1.8.1/examples/example_gsl.c
    unuran-1.8.1/examples/example_mcorr.c
    unuran-1.8.1/examples/example_mixt.c
    unuran-1.8.1/examples/example_mixt_inv.c
    unuran-1.8.1/examples/example_prng.c
    unuran-1.8.1/examples/example_prng_str.c
    unuran-1.8.1/examples/example_rngstreams.c
    unuran-1.8.1/examples/example_vemp.c
    unuran-1.8.1/experiments/Makefile.am
    unuran-1.8.1/experiments/Makefile.in
    unuran-1.8.1/experiments/make_timing_table.c
    unuran-1.8.1/experiments/timings_chap_10.conf
    unuran-1.8.1/experiments/timings_chap_8.conf
    unuran-1.8.1/scripts/Makefile.am
    unuran-1.8.1/scripts/Makefile.in
    unuran-1.8.1/scripts/compute_machine_constants.c
    unuran-1.8.1/scripts/make_urng_header.pl
    unuran-1.8.1/scripts/merge_h.pl
    unuran-1.8.1/scripts/read_PDF.pl
    unuran-1.8.1/scripts/remove_comments.pl
    unuran-1.8.1/scripts/run_valgrind.sh
    unuran-1.8.1/scripts/win32/Makefile.win32
    unuran-1.8.1/scripts/win32/build.sh
    unuran-1.8.1/scripts/win32/example1.c
    unuran-1.8.1/scripts/win32/example2.c
    unuran-1.8.1/scripts/win32/make_dll_def.pl
    unuran-1.8.1/src/Makefile.am
    unuran-1.8.1/src/Makefile.in
    unuran-1.8.1/src/README
    unuran-1.8.1/src/distr/Makefile.am
    unuran-1.8.1/src/distr/Makefile.in
    unuran-1.8.1/src/distributions/Makefile.am
    unuran-1.8.1/src/distributions/Makefile.in
    unuran-1.8.1/src/distributions/README
    unuran-1.8.1/src/methods/Makefile.am
    unuran-1.8.1/src/methods/Makefile.in
```

```
    unuran-1.8.1/src/parser/Makefile.am
    unuran-1.8.1/src/parser/Makefile.in
    unuran-1.8.1/src/parser/functparser_doc.dh
    unuran-1.8.1/src/parser/make_stringparser.pl
    unuran-1.8.1/src/parser/stringparser_doc.dh
    unuran-1.8.1/src/specfunct/Makefile.am
    unuran-1.8.1/src/specfunct/Makefile.in
    unuran-1.8.1/src/tests/Makefile.am
    unuran-1.8.1/src/tests/Makefile.in
    unuran-1.8.1/src/uniform/Makefile.am
    unuran-1.8.1/src/uniform/Makefile.in
    unuran-1.8.1/src/uniform/fish.c
    unuran-1.8.1/src/uniform/mrg31k3p.c
    unuran-1.8.1/src/uniform/mstd.c
    unuran-1.8.1/src/uniform/unuran_urng_gsl.h
    unuran-1.8.1/src/uniform/unuran_urng_prng.h
    unuran-1.8.1/src/uniform/unuran_urng_rngstreams.h
    unuran-1.8.1/src/uniform/urng_builtin.c
    unuran-1.8.1/src/uniform/urng_builtin.h
    unuran-1.8.1/src/uniform/urng_fvoid.c
    unuran-1.8.1/src/uniform/urng_fvoid.h
    unuran-1.8.1/src/uniform/urng_gsl.c
    unuran-1.8.1/src/uniform/urng_gsl.h
    unuran-1.8.1/src/uniform/urng_gslqrng.c
    unuran-1.8.1/src/uniform/urng_gslqrng.h
    unuran-1.8.1/src/uniform/urng_prng.c
    unuran-1.8.1/src/uniform/urng_prng.h
    unuran-1.8.1/src/uniform/urng_randomshift.c
    unuran-1.8.1/src/uniform/urng_randomshift.h
    unuran-1.8.1/src/uniform/urng_rngstreams.c
    unuran-1.8.1/src/uniform/urng_rngstreams.h
    unuran-1.8.1/src/unuran.h.in
    unuran-1.8.1/src/urng/Makefile.am
    unuran-1.8.1/src/urng/Makefile.in
    unuran-1.8.1/src/utils/Makefile.am
    unuran-1.8.1/src/utils/Makefile.in
    unuran-1.8.1/tests/Makefile.am
    unuran-1.8.1/tests/Makefile.in
    unuran-1.8.1/tests/README.conf
    unuran-1.8.1/tests/make_test_files.pl
    unuran-1.8.1/tests/t_arou.c
    unuran-1.8.1/tests/t_arou.conf
    unuran-1.8.1/tests/t_ars.c
    unuran-1.8.1/tests/t_ars.conf
    unuran-1.8.1/tests/t_auto.c
    unuran-1.8.1/tests/t_auto.conf
    unuran-1.8.1/tests/t_cext.c
    unuran-1.8.1/tests/t_cext.conf
    unuran-1.8.1/tests/t_cstd.c
    unuran-1.8.1/tests/t_cstd.conf
    unuran-1.8.1/tests/t_dari.c
    unuran-1.8.1/tests/t_dari.conf
    unuran-1.8.1/tests/t_dau.c
    unuran-1.8.1/tests/t_dau.conf
    unuran-1.8.1/tests/t_deprecated_tdrgw.c
    unuran-1.8.1/tests/t_deprecated_vmt.c
    unuran-1.8.1/tests/t_deprecated_vmt.conf
    unuran-1.8.1/tests/t_dext.c
    unuran-1.8.1/tests/t_dext.conf
    unuran-1.8.1/tests/t_dgt.c
    unuran-1.8.1/tests/t_dgt.conf
    unuran-1.8.1/tests/t_distr.c
    unuran-1.8.1/tests/t_distr.conf
    unuran-1.8.1/tests/t_distr_cemp.c
    unuran-1.8.1/tests/t_distr_cemp.conf
    unuran-1.8.1/tests/t_distr_condi.c
    unuran-1.8.1/tests/t_distr_condi.conf
```

```
    unuran-1.8.1/tests/t_distr_cont.c
    unuran-1.8.1/tests/t_distr_cont.conf
    unuran-1.8.1/tests/t_distr_corder.c
    unuran-1.8.1/tests/t_distr_corder.conf
    unuran-1.8.1/tests/t_distr_cvec.c
    unuran-1.8.1/tests/t_distr_cvec.conf
    unuran-1.8.1/tests/t_distr_cvemp.c
    unuran-1.8.1/tests/t_distr_cvemp.conf
    unuran-1.8.1/tests/t_distr_cxtrans.c
    unuran-1.8.1/tests/t_distr_cxtrans.conf
    unuran-1.8.1/tests/t_distr_discr.c
    unuran-1.8.1/tests/t_distr_discr.conf
    unuran-1.8.1/tests/t_distr_matr.c
    unuran-1.8.1/tests/t_distr_matr.conf
    unuran-1.8.1/tests/t_dsrou.c
    unuran-1.8.1/tests/t_dsrou.conf
    unuran-1.8.1/tests/t_dss.c
    unuran-1.8.1/tests/t_dss.conf
    unuran-1.8.1/tests/t_dstd.c
    unuran-1.8.1/tests/t_dstd.conf
    unuran-1.8.1/tests/t_empk.c
    unuran-1.8.1/tests/t_empk.conf
    unuran-1.8.1/tests/t_empl.c
    unuran-1.8.1/tests/t_empl.conf
    unuran-1.8.1/tests/t_gibbs.c
    unuran-1.8.1/tests/t_gibbs.conf
    unuran-1.8.1/tests/t_hinv.c
    unuran-1.8.1/tests/t_hinv.conf
    unuran-1.8.1/tests/t_hist.c
    unuran-1.8.1/tests/t_hist.conf
    unuran-1.8.1/tests/t_hitro.c
    unuran-1.8.1/tests/t_hrb.c
    unuran-1.8.1/tests/t_hrb.conf
    unuran-1.8.1/tests/t_hrd.c
    unuran-1.8.1/tests/t_hrd.conf
    unuran-1.8.1/tests/t_hri.c
    unuran-1.8.1/tests/t_hri.conf
    unuran-1.8.1/tests/t_info.c
    unuran-1.8.1/tests/t_info.conf
    unuran-1.8.1/tests/t_itdr.c
    unuran-1.8.1/tests/t_itdr.conf
    unuran-1.8.1/tests/t_mcorr.c
    unuran-1.8.1/tests/t_mcorr.conf
    unuran-1.8.1/tests/t_mixt.c
    unuran-1.8.1/tests/t_mvstd.c
    unuran-1.8.1/tests/t_mvstd.conf
    unuran-1.8.1/tests/t_mvtdr.c
    unuran-1.8.1/tests/t_ninv.c
    unuran-1.8.1/tests/t_ninv.conf
    unuran-1.8.1/tests/t_norta.c
    unuran-1.8.1/tests/t_norta.conf
    unuran-1.8.1/tests/t_nrou.c
    unuran-1.8.1/tests/t_nrou.conf
    unuran-1.8.1/tests/t_pinv
    unuran-1.8.1/tests/t_pinv.c
    unuran-1.8.1/tests/t_srou.c
    unuran-1.8.1/tests/t_srou.conf
    unuran-1.8.1/tests/t_ssr.c
    unuran-1.8.1/tests/t_ssr.conf
    unuran-1.8.1/tests/t_stringparser.c
    unuran-1.8.1/tests/t_stringparser.conf
    unuran-1.8.1/tests/t_tabl.c
    unuran-1.8.1/tests/t_tabl.conf
    unuran-1.8.1/tests/t_tdr.c
    unuran-1.8.1/tests/t_tdr.conf
    unuran-1.8.1/tests/t_tdr_gw.c
    unuran-1.8.1/tests/t_tdr_gw.conf
```

```
    unuran-1.8.1/tests/t_tdr_ia.c
    unuran-1.8.1/tests/t_tdr_ia.conf
    unuran-1.8.1/tests/t_tdr_ps.c
    unuran-1.8.1/tests/t_tdr_ps.conf
    unuran-1.8.1/tests/t_unif.c
    unuran-1.8.1/tests/t_unif.conf
    unuran-1.8.1/tests/t_unur_error.c
    unuran-1.8.1/tests/t_unur_error.conf
    unuran-1.8.1/tests/t_unur_tests.c
    unuran-1.8.1/tests/t_unur_tests.conf
    unuran-1.8.1/tests/t_urng.c
    unuran-1.8.1/tests/t_urng.conf
    unuran-1.8.1/tests/t_utdr.c
    unuran-1.8.1/tests/t_utdr.conf
    unuran-1.8.1/tests/t_util_matrix.c
    unuran-1.8.1/tests/t_util_matrix.conf
    unuran-1.8.1/tests/t_vempk.c
    unuran-1.8.1/tests/t_vempk.conf
    unuran-1.8.1/tests/t_vnrou.c
    unuran-1.8.1/tests/t_vnrou.conf
    unuran-1.8.1/tests/t_x_gen.c
    unuran-1.8.1/tests/t_x_gen.conf
    unuran-1.8.1/tests/test_StdDistr.c
    unuran-1.8.1/tests/test_StdDistr.m
    unuran-1.8.1/tests/test_functionparser.c
    unuran-1.8.1/tests/test_functionparser.m
    unuran-1.8.1/tests/testcounter.c
    unuran-1.8.1/tests/testdistributions/Makefile.am
    unuran-1.8.1/tests/testdistributions/Makefile.in
    unuran-1.8.1/tests/testdistributions/c_sawtooth_contpdf.c
    unuran-1.8.1/tests/testdistributions/c_sawtooth_discpdf.c
    unuran-1.8.1/tests/testdistributions/c_w_pdf_from_logpdf.c
    unuran-1.8.1/tests/testdistributions/c_with_multiple_of_pdf.c
    unuran-1.8.1/tests/testdistributions/c_wo_logpdf.c
    unuran-1.8.1/tests/testdistributions/testdistributions.h
    unuran-1.8.1/tests/testdistributions/vc_cauchy_RoU_ball.c
    unuran-1.8.1/tests/testdistributions/vc_special_correlations_ar1.c
    unuran-1.8.1/tests/testdistributions/vc_special_correlations_constantrho.c
    unuran-1.8.1/tests/testdistributions/vc_w_marginals.c
    unuran-1.8.1/tests/testdistributions/vc_wo_logpdf.c
    unuran-1.8.1/tests/testroutines.c
    unuran-1.8.1/tests/testunuran.h
    unuran-1.8.1/src/distr/deprecated_distr.c
    unuran-1.8.1/src/distr/deprecated_distr.h
    unuran-1.8.1/src/methods/deprecated_methods.c
    unuran-1.8.1/src/methods/deprecated_methods.h
    unuran-1.8.1/src/methods/deprecated_tdrgw.h
    unuran-1.8.1/src/methods/deprecated_vmt.c
    unuran-1.8.1/src/methods/deprecated_vmt.h
    unuran-1.8.1/src/methods/deprecated_vmt_struct.h
    unuran-1.8.1/src/parser/stringparser_lists.ch.in
UNU.RAN relies on a modified version of the library Cephes, see ./src/src/specfunct/cephes_source.h

Name: NumPy
License: BSD License
Copyright (c) 2005-2022, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
```

```
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: array-api-compat
License: MIT
MIT License
Copyright (c) 2022 Consortium for Python Data API Standards
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
---------- numpy
Copyright notice(s):
Copyright (c) 1992-2013 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                        reserved.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura, All rights reserved.
Copyright (c) 2005-2017, NumPy Developers. All rights reserved.
Copyright 2010-2012, D. E. Shaw Research.
All rights reserved.
Copyright (c) 2008 Ian Bicking and Contributors
Copyright (c) 2018 Melissa E. O'Neill
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
Copyright (C) 2010 The Android Open Source Project
License fulltext:
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
```

```
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----
This binary distribution of NumPy also bundles the following software:
Name: OpenBLAS
Files: numpy.libs/libscipy_openblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: numpy.libs/libscipy_openblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
```

```
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Name: libquadmath
Files: numpy.libs/libquadmath*.so
Description: dynamically linked to files compiled with gcc
Availability: https://gcc.gnu.org/git/?p=gcc.git;a=tree;f=libquadmath
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

---------- Bundled licenses in numpy
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
License: BSD-3-Clause
Copyright (c) 1992-2013 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                        reserved.
$COPYRIGHT$
Additional copyrights may follow
$HEADER$
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
```

```
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


Name: tempita
License: MIT
Copyright (c) 2008 Ian Bicking and Contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: dragon4
License: MIT
Copyright (c) 2014 Ryan Juckett
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.

Name: libdivide
License: Zlib
zlib License
------------
Copyright (C) 2010 - 2019 ridiculous_fish, <libdivide@ridiculousfish.com>
Copyright (C) 2016 - 2019 Kim Walisch, <kim.walisch@gmail.com>
This software is provided 'as-is', without any express or implied
warranty.  In no event will the authors be held liable for any damages
```

```
arising from the use of this software.
Permission is granted to anyone to use this software for any purpose,
including commercial applications, and to alter it and redistribute it
freely, subject to the following restrictions:
1. The origin of this software must not be misrepresented; you must not
    claim that you wrote the original software. If you use this software
    in a product, an acknowledgment in the product documentation would be
    appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be
    misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.
--------------------------------------------------------------------------------

Name: SPLITMIX64
License: BSD 3-Clause
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all copyright
and related and neighboring rights to this software to the public domain
worldwide. This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.
--------------------------------------------------------------------------------

Name: SFC64
License: MIT
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
--------------------------------------------------------------------------------

Name: PHILOX
License: BSD 3-Clause
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the
following conditions are met:
   - Redistributions of source code must retain the above
   copyright notice, this list of conditions, and the
   following disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions, and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - Neither the name of D. E. Shaw Research nor the names
    of its contributors may be used to endorse or promote
    products derived from this software without specific prior
    written permission.
```

```
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
--------------------------------------------------------------------------------

Name: PCG64
License: MIT
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
--------------------------------------------------------------------------------

Name: MT19937
License: MIT
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the original
design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
   -  Redistributions of source code must retain the above
   copyright notice, this list of conditions and the following
   disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - The names of its contributors may not be used to endorse
    or promote products derived from this software without
    specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
```

```
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval
function from Richard J. Wagner's implementation of the
Mersenne Twister RNG, optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons
to whom the Software is furnished to do so, subject to the
following conditions:
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO
THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
--------------------------------------------------------------------------------

Name: Julia
License: MIT
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.
--------------------------------------------------------------------------------

Name: Random
License: dual-licensed under the The University of Illinois/NCSA
Open Source License (NCSA) and The 3-Clause BSD License
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal with the Software without restriction,
including without limitation the rights to use, copy, modify,
```

```
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimers.
Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimers in the documentation and/or other materials
provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of
any contributors may be used to endorse or promote products
derived from this Software without specific prior written
permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE CONTRIBUTORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE
USE OR OTHER DEALINGS WITH THE SOFTWARE.
3-Clause BSD License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the
following conditions are met:
    - Redistributions of source code must retain the
    above copyright notice, this list of conditions
    and the following disclaimer.
    - Redistributions in binary form must reproduce
    the above copyright notice, this list of conditions
    and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
   - Neither the name of the copyright holder nor the
   names of its contributors may be used to endorse or
   promote products derived from this software without
   specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR C
ONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from
original sources, often the algorithm's designer.
Component licenses are located with the component code.
--------------------------------------------------------------------------------

Name: nympy.core.ma
License: BSD 3-Clause
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the
following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
```

```
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
       names of its contributors may be used to endorse or promote products
       derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-----------------------------------------------------------------------------

Name: svml
BSD 3-Clause "New" or "Revised" License
Copyright (c) 2005-2021, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

==========
==========

sentence-transformers

```
Copyright 2019 Nils Reimers
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
       http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
./NOTICE.txt
Copyright 2019
Ubiquitous Knowledge Processing (UKP) Lab
Technische Universität Darmstadt
```

```
4th Party Dependencies
----------------------

huggingface-hub
---------------
Copyright 2022-present, the HuggingFace Inc. team.
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
    http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

pillow
------
The Python Imaging Library (PIL) is
    Copyright © 1997-2011 by Secret Labs AB
    Copyright © 1995-2011 by Fredrik Lundh and contributors
Pillow is the friendly PIL fork. It is
    Copyright © 2010-2024 by Jeffrey A. Clark and contributors
Like PIL, Pillow is licensed under the open source HPND License:
By obtaining, using, and/or copying this software and/or its associated
documentation, you agree that you have read, understood, and will comply
with the following terms and conditions:
Permission to use, copy, modify and distribute this software and its
documentation for any purpose and without fee is hereby granted,
provided that the above copyright notice appears in all copies, and that
both that copyright notice and this permission notice appear in supporting
documentation, and that the name of Secret Labs AB or the author not be
used in advertising or publicity pertaining to distribution of the software
without specific, written prior permission.
SECRET LABS AB AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS
SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS.
IN NO EVENT SHALL SECRET LABS AB OR THE AUTHOR BE LIABLE FOR ANY SPECIAL,
INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM
LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE
OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE.

scikit-learn
------------
Copyright (c) 2007-2024 The scikit-learn developers.

scipy
Copyright (c) 2001-2002 Enthought, Inc. 2003-2024, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
```

```
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----
The SciPy repository and source distributions bundle a number of libraries that
are compatibly licensed.  We list these here.

Name: Decorator
Files: scipy/_lib/decorator.py
License: 2-clause BSD
  For details, see the header inside scipy/_lib/decorator.py

Name: fast_matrix_market
Files: scipy/io/_fast_matrix_market/*
License: 2-clause BSD
  For details, see scipy/io/_fast_matrix_market/LICENSE.txt

Name: pystreambuf
Files: scipy/io/_fast_matrix_market/src/pystreambuf.h
License: 3-clause BSD
  For details, see the header inside
  scipy/io/_fast_matrix_market/src/pystreambuf.h

Name: fast_float
Files: scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/fast_float/*
License: MIT
  For details, see
  scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/fast_float/LICENSE-MIT

Name: ryu
Files: scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/ryu/*
License: BSL-1.0
  For details, see
  scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/ryu/LICENSE-BOOST

Name: ID
Files: scipy/linalg/src/id_dist/*
License: 3-clause BSD
  For details, see
  scipy/linalg/src/id_dist/doc/doc.tex

Name: L-BFGS-B
Files: scipy/optimize/lbfgsb/*
License: BSD license
  For details, see scipy/optimize/lbfgsb/README

Name: LAPJVsp
Files: scipy/sparse/csgraph/_matching.pyx
License: 3-clause BSD
Copyright 1987-, A. Volgenant/Amsterdam School of Economics,
                 University of Amsterdam

  Distributed under 3-clause BSD license with permission from
  University of Amsterdam.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
    without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
```

```
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
  CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
  ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
  POSSIBILITY OF SUCH DAMAGE.

Name: SuperLU
Files: scipy/sparse/linalg/dsolve/SuperLU/*
License: 3-clause BSD
  For details, see scipy/sparse/linalg/dsolve/SuperLU/License.txt

Name: ARPACK
Files: scipy/sparse/linalg/eigen/arpack/ARPACK/*
License: 3-clause BSD
  For details, see scipy/sparse/linalg/eigen/arpack/ARPACK/COPYING

Name: Qhull
Files: scipy/spatial/qhull/*
License: Qhull license (BSD-like)
  For details, see scipy/spatial/qhull/COPYING.txt

Name: Cephes
Files: scipy/special/cephes/*
License: 3-clause BSD
  Distributed under 3-clause BSD license with permission from the author,
  see https://lists.debian.org/debian-legal/2004/12/msg00295.html

  Cephes Math Library Release 2.8:  June, 2000
  Copyright 1984, 1995, 2000 by Stephen L. Moshier
  This software is derived from the Cephes Math Library and is
  incorporated herein by permission of the author.
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
      * Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
      * Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in the
        documentation and/or other materials provided with the distribution.
      * Neither the name of the <organization> nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
  DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
  (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
  LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
  ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
  SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Faddeeva
Files: scipy/special/Faddeeva.*
License: MIT
  Copyright (c) 2012 Massachusetts Institute of Technology
  Permission is hereby granted, free of charge, to any person obtaining
  a copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
  distribute, sublicense, and/or sell copies of the Software, and to
```

```
  permit persons to whom the Software is furnished to do so, subject to
  the following conditions:
  The above copyright notice and this permission notice shall be
  included in all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
  EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
  NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
  LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
  OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
  WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: qd
Files: scipy/special/cephes/dd_*.[ch]
License: modified BSD license ("BSD-LBNL-License.doc")
  This work was supported by the Director, Office of Science, Division
  of Mathematical, Information, and Computational Sciences of the
  U.S. Department of Energy under contract numbers DE-AC03-76SF00098 and
  DE-AC02-05CH11231.
  Copyright (c) 2003-2009, The Regents of the University of California,
  through Lawrence Berkeley National Laboratory (subject to receipt of
  any required approvals from U.S. Dept. of Energy) All rights reserved.
  1. Redistribution and use in source and binary forms, with or
  without modification, are permitted provided that the following
  conditions are met:
  (1) Redistributions of source code must retain the copyright
  notice, this list of conditions and the following disclaimer.
  (2) Redistributions in binary form must reproduce the copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.
  (3) Neither the name of the University of California, Lawrence
  Berkeley National Laboratory, U.S. Dept. of Energy nor the names
  of its contributors may be used to endorse or promote products
  derived from this software without specific prior written
  permission.
  2. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
  3. You are under no obligation whatsoever to provide any bug fixes,
  patches, or upgrades to the features, functionality or performance of
  the source code ("Enhancements") to anyone; however, if you choose to
  make your Enhancements available either publicly, or directly to
  Lawrence Berkeley National Laboratory, without imposing a separate
  written license agreement for such Enhancements, then you hereby grant
  the following license: a non-exclusive, royalty-free perpetual license
  to install, use, modify, prepare derivative works, incorporate into
  other computer software, distribute, and sublicense such enhancements
  or derivative works thereof, in binary and source code form.

Name: pypocketfft
Files: scipy/fft/_pocketfft/[pocketfft.h, pypocketfft.cxx]
License: 3-Clause BSD
  For details, see scipy/fft/_pocketfft/LICENSE.md

Name: uarray
Files: scipy/_lib/uarray/*
License: 3-Clause BSD
  For details, see scipy/_lib/uarray/LICENSE
```

```
Name: ampgo
Files: benchmarks/benchmarks/go_benchmark_functions/*.py
License: MIT
  Functions for testing global optimizers, forked from the AMPGO project,
  https://code.google.com/archive/p/ampgo

Name: pybind11
Files: no source files are included, however pybind11 binary artifacts are
  included with every binary build of SciPy.
License:
  Copyright (c) 2016 Wenzel Jakob <wenzel.jakob@epfl.ch>, All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice, this
     list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
     and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
  FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: HiGHS
Files: scipy/optimize/_highs/*
License: MIT
  For details, see scipy/optimize/_highs/LICENCE

Name: Boost
Files: scipy/_lib/boost_math/*
License: Boost Software License - Version 1.0
  For details, see scipy/_lib/boost_math/LICENSE.txt

Name: Biasedurn
Files: scipy/stats/biasedurn/*
License 3-Clause BSD
  For details, see scipy/stats/biasedurn/license.txt

Name: UNU.RAN
Files: scipy/_lib/unuran/*
License 3-Clause BSD
  For details, see scipy/_lib/unuran/license.txt

Name: NumPy
Files: scipy/stats/_rcont/[logfactorial.h,logfactorial.c]
License 3-Clause BSD
  For details, see header inside scipy/stats/_rcont/logfactorial.h
  and scipy/stats/_rcont/logfactorial.c

Name: array-api-compat
Files: scipy/_lib/array-api-compat/*
License: MIT
  For details, see scipy/_lib/array-api-compat/LICENCE

SciPy bundles a number of libraries that are compatibly licensed.  We list
these here.
```

```
Name: Numpydoc
Files: doc/sphinxext/numpydoc/*
License: 2-clause BSD
  For details, see doc/sphinxext/LICENSE.txt

Name: scipy-sphinx-theme
Files: doc/scipy-sphinx-theme/*
License: 3-clause BSD, PSF and Apache 2.0
  For details, see doc/sphinxext/LICENSE.txt

Name: Six
Files: scipy/_lib/six.py
License: MIT
  For details, see the header inside scipy/_lib/six.py

Name: Decorator
Files: scipy/_lib/decorator.py
License: 2-clause BSD
  For details, see the header inside scipy/_lib/decorator.py

Name: ID
Files: scipy/linalg/src/id_dist/*
License: 3-clause BSD
  For details, see scipy/linalg/src/id_dist/doc/doc.tex

Name: L-BFGS-B
Files: scipy/optimize/lbfgsb/*
License: BSD license
  For details, see scipy/optimize/lbfgsb/README

Name: SuperLU
Files: scipy/sparse/linalg/dsolve/SuperLU/*
License: 3-clause BSD
  For details, see scipy/sparse/linalg/dsolve/SuperLU/License.txt

Name: ARPACK
Files: scipy/sparse/linalg/eigen/arpack/ARPACK/*
License: 3-clause BSD
  For details, see scipy/sparse/linalg/eigen/arpack/ARPACK/COPYING

Name: Qhull
Files: scipy/spatial/qhull/*
License: Qhull license (BSD-like)
  For details, see scipy/spatial/qhull/COPYING.txt

Name: Cephes
Files: scipy/special/cephes/*
License: 3-clause BSD
  Distributed under 3-clause BSD license with permission from the author,
  see https://lists.debian.org/debian-legal/2004/12/msg00295.html

  Cephes Math Library Release 2.8:  June, 2000
  Copyright 1984, 1995, 2000 by Stephen L. Moshier
  This software is derived from the Cephes Math Library and is
  incorporated herein by permission of the author.
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
      * Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
      * Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in the
        documentation and/or other materials provided with the distribution.
      * Neither the name of the <organization> nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
```

```
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
  DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
  (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
  LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
  ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
  SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Faddeeva
Files: scipy/special/Faddeeva.*
License: MIT
  Copyright (c) 2012 Massachusetts Institute of Technology
  Permission is hereby granted, free of charge, to any person obtaining
  a copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
  distribute, sublicense, and/or sell copies of the Software, and to
  permit persons to whom the Software is furnished to do so, subject to
  the following conditions:
  The above copyright notice and this permission notice shall be
  included in all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
  EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
  NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
  LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
  OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
  WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: qd
Files: scipy/special/cephes/dd_*.[ch]
License: modified BSD license ("BSD-LBNL-License.doc")
  This work was supported by the Director, Office of Science, Division
  of Mathematical, Information, and Computational Sciences of the
  U.S. Department of Energy under contract numbers DE-AC03-76SF00098 and
  DE-AC02-05CH11231.
  Copyright (c) 2003-2009, The Regents of the University of California,
  through Lawrence Berkeley National Laboratory (subject to receipt of
  any required approvals from U.S. Dept. of Energy) All rights reserved.
  1. Redistribution and use in source and binary forms, with or
  without modification, are permitted provided that the following
  conditions are met:
  (1) Redistributions of source code must retain the copyright
  notice, this list of conditions and the following disclaimer.
  (2) Redistributions in binary form must reproduce the copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.
  (3) Neither the name of the University of California, Lawrence
  Berkeley National Laboratory, U.S. Dept. of Energy nor the names
  of its contributors may be used to endorse or promote products
  derived from this software without specific prior written
  permission.
  2. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
  3. You are under no obligation whatsoever to provide any bug fixes,
```

```
  patches, or upgrades to the features, functionality or performance of
  the source code ("Enhancements") to anyone; however, if you choose to
  make your Enhancements available either publicly, or directly to
  Lawrence Berkeley National Laboratory, without imposing a separate
  written license agreement for such Enhancements, then you hereby grant
  the following license: a non-exclusive, royalty-free perpetual license
  to install, use, modify, prepare derivative works, incorporate into
  other computer software, distribute, and sublicense such enhancements
  or derivative works thereof, in binary and source code form.

ndimage
-------
Copyright (C) 2003-2005 Peter J. Verveer
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. The name of the author may not be used to endorse or promote
   products derived from this software without specific prior
   written permission.
THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING
IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

optimize
--------
Copyright (c) 2002-2005, Jean-Sebastien Roy (js@jeannot.org)
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

lapack_deprecation
------------------
Copyright (c) 1992-2015 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2015 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2015 The University of Colorado Denver.  All rights
                        reserved.
$COPYRIGHT$
Additional copyrights may follow
```

```
$HEADER$
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

SuperLU
-------
Copyright (c) 2003, The Regents of the University of California, through
Lawrence Berkeley National Laboratory (subject to receipt of any required
approvals from U.S. Dept. of Energy)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
(3) Neither the name of Lawrence Berkeley National Laboratory, U.S. Dept. of
Energy nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This binary distribution of SciPy also bundles the following software:

Name: OpenBLAS
Files: scipy.libs/libopenblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 2011-2014, The OpenBLAS Project
```

```
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: scipy.libs/libopenblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
```

```
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: GCC runtime library
Files: scipy.libs/libgfortran*.so
Description: dynamically linked to files compiled with gcc
Availability: https://gcc.gnu.org/git/?p=gcc.git;a=tree;f=libgfortran
License: GPL-3.0-with-GCC-exception
  Copyright (C) 2002-2017 Free Software Foundation, Inc.
  Libgfortran is free software; you can redistribute it and/or modify
  it under the terms of the GNU General Public License as published by
  the Free Software Foundation; either version 3, or (at your option)
  any later version.
  Libgfortran is distributed in the hope that it will be useful,
  but WITHOUT ANY WARRANTY; without even the implied warranty of
  MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
  GNU General Public License for more details.
  Under Section 7 of GPL version 3, you are granted additional
  permissions described in the GCC Runtime Library Exception, version
  3.1, as published by the Free Software Foundation.
  You should have received a copy of the GNU General Public License and
  a copy of the GCC Runtime Library Exception along with this program;
  see the files COPYING3 and COPYING.RUNTIME respectively.  If not, see
  <http://www.gnu.org/licenses/>.
Full text of license texts referred to above follows (that they are
listed below does not necessarily imply the conditions apply to the
present binary release):
A copy of the GNU General Public License, v3.0 with GCC Runtime library exception  license can be found
in the 'Standard Licenses' section

Name: libquadmath
Files: scipy.libs/libquadmath*.so
Description: dynamically linked to files compiled with gcc
Availability: https://gcc.gnu.org/git/?p=gcc.git;a=tree;f=libquadmath
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

The present document and all of the software in the accompanying distribution
(which is contained in the directory id_dist and its subdirectories, or in the
file id_dist.tar.gz) is Copyright (c) 2014 by P.-G. Martinsson, V. Rokhlin,
Y. Shkolnisky, and M. Tygert. All rights reserved.

Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
1.  Redistributions  of  source  code  must  retain  the  above  copyright
    notice,  this  list  of conditions, and the following disclaimer.
2.  Redistributions in binary form must reproduce the above copyright notice,
    this list of conditions, and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
3.  None of the names of the copyright holders may be used to endorse or promote
 products derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS \AS IS" AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT
SHALL THE COPYRIGHT OWNERS  BE  LIABLE  FOR  ANY DIRECT,  INDIRECT,  INCIDENTAL,
```

```
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.

--------------------------------------------------------------------------------

torch
-----
Copyright (c) 2016-     Facebook, Inc            (Adam Paszke)
Copyright (c) 2014-     Facebook, Inc            (Soumith Chintala)
Copyright (c) 2011-2014 Idiap Research Institute (Ronan Collobert)
Copyright (c) 2012-2014 Deepmind Technologies    (Koray Kavukcuoglu)
Copyright (c) 2011-2012 NEC Laboratories America (Koray Kavukcuoglu)
Copyright (c) 2011-2013 NYU                      (Clement Farabet)
Copyright (c) 2006-2010 NEC Laboratories America (Ronan Collobert, Leon Bottou, Iain Melvin, Jason Weston)
Copyright (c) 2006      Idiap Research Institute (Samy Bengio)
Copyright (c) 2001-2004 Idiap Research Institute (Ronan Collobert, Samy Bengio, Johnny Mariethoz)

From Caffe2:
Copyright (c) 2016-present, Facebook Inc. All rights reserved.
All contributions by Facebook:
Copyright (c) 2016 Facebook Inc.
All contributions by Google:
Copyright (c) 2015 Google Inc.
All rights reserved.
All contributions by Yangqing Jia:
Copyright (c) 2015 Yangqing Jia
All rights reserved.
All contributions by Kakao Brain:
Copyright 2019-2020 Kakao Brain
All contributions by Cruise LLC:
Copyright (c) 2022 Cruise LLC.
All rights reserved.
All contributions from Caffe:
Copyright(c) 2013, 2014, 2015, the respective contributors
All rights reserved.

All other contributions:
Copyright(c) 2015, 2016 the respective contributors
All rights reserved.
Caffe2 uses a copyright model similar to Caffe: each contributor holds
copyright over their contributions to Caffe2. The project versioning records
all such contribution and copyright details. If a contributor wants to further
mark their specific copyright on a particular contribution, they should
indicate their copyright solely in the commit message of the change when it is
committed.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. Neither the names of Facebook, Deepmind Technologies, NYU, NEC Laboratories America
   and IDIAP Research Institute nor the names of its contributors may be
   used to endorse or promote products derived from this software without
   specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
```

```
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.
-------------------------------------------------------------------------------

tqdm
----
`tqdm` is a product of collaborative work.
Unless otherwise stated, all authors (see commit logs) retain copyright
for their respective work, and release the work under the MIT licence
(text below).
Exceptions or notable authors are listed below
in reverse chronological order:
* files: *
  MPL-2.0 2015-2024 (c) Casper da Costa-Luis
  [casperdcl](https://github.com/casperdcl).
* files: tqdm/_tqdm.py
  MIT 2016 (c) [PR #96] on behalf of Google Inc.
* files: tqdm/_tqdm.py README.rst .gitignore
  MIT 2013 (c) Noam Yorav-Raphael, original author.
[PR #96]: #96

Mozilla Public Licence (MPL) v. 2.0 - Exhibit A
This Source Code Form is subject to the terms of the
Mozilla Public License, v. 2.0.
If a copy of the MPL was not distributed with this project,
You can obtain one at https://mozilla.org/MPL/2.0/.

Copyright (c) 2013 noamraph
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

transformers
Copyright 2018- The Hugging Face team. All rights reserved.

================================================================================

typing-extensions
-----------------
Python Software Foundation license, version 2
A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section

ZERO-CLAUSE BSD LICENSE FOR CODE IN THE PYTHON DOCUMENTATION
----------------------------------------------------------------------
Permission to use, copy, modify, and/or distribute this software for any
purpose with or without fee is hereby granted.
THE SOFTWARE IS PROVIDED ""AS IS"" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH
REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT,
INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM
LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR
OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
```

```
PERFORMANCE OF THIS SOFTWARE.
--------------------------------------------------------------------------------

certifi
-------
Party Dependency #9 License : Mozilla Public License 2.0
Fourth Party Dependency #9 Copyright :
This package contains a modified version of ca-bundle.crt:
ca-bundle.crt -- Bundle of CA Root Certificates
This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt).  This file can be found in the mozilla source tree:
https://hg.mozilla.org/mozilla-central/file/tip/security/nss/lib/ckfw/builtins/certdata.txt
It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php_curl, or with
an Apache+mod_ssl webserver for SSL client authentication.
Just configure this file as the SSLCACertificateFile.#
***** BEGIN LICENSE BLOCK *****
This Source Code Form is subject to the terms of the Mozilla Public License,
v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain
one at http://mozilla.org/MPL/2.0/.
Mozilla Public License
@(#) $RCSfile: certdata.txt,v $ $Revision: 1.80 $ $Date: 2011/11/03 15:11:58 $

charset-normalizer
------------------
Copyright (c) 2025 TAHRI Ahmed R.

filelock
--------
This is free and unencumbered software released into the public domain.
Anyone is free to copy, modify, publish, use, compile, sell, or
distribute this software, either in source code form or as a compiled
binary, for any purpose, commercial or non-commercial, and by any
means.
In jurisdictions that recognize copyright laws, the author or authors
of this software dedicate any and all copyright interest in the
software to the public domain. We make this dedication for the benefit
of the public at large and to the detriment of our heirs and
successors. We intend this dedication to be an overt act of
relinquishment in perpetuity of all present and future rights to this
software under copyright law.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.
For more information, please refer to <http://unlicense.org>

fsspec
------
BSD 3-Clause License
Copyright (c) 2018, Martin Durant
All rights reserved.

idna
----
Copyright (c) 2013-2024, Kim Davies and contributors. All rights reserved.

jinja2
------
Copyright 2007 Pallets

joblib
------
```

```
Copyright (c) 2008-2021, The joblib developers.
All rights reserved.

MarkupSafe
----------
Copyright 2010 Pallets

mpmath
------
Copyright (c) 2005-2024 Fredrik Johansson and mpmath contributors

networkx
--------
NetworkX is distributed with the 3-clause BSD license.
::
   Copyright (C) 2004-2024, NetworkX Developers
   Aric Hagberg <hagberg@lanl.gov>
   Dan Schult <dschult@colgate.edu>
   Pieter Swart <swart@lanl.gov>
   All rights reserved.
   Redistribution and use in source and binary forms, with or without
   modification, are permitted provided that the following conditions are
   met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
     * Neither the name of the NetworkX Developers nor the names of its
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
   THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
   "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
   LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
   A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
   OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
   SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
   LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
   DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
   THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
   (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
   OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

numpy
-----
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
        from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
```

```
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This binary distribution of NumPy also bundles the following software:

Name: OpenBLAS
Files: numpy/.dylibs/libopenblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: numpy/.dylibs/libopenblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
```

```
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: GCC runtime library
Files: numpy/.dylibs/libgfortran*, numpy/.dylibs/libgcc*
Description: dynamically linked to files compiled with gcc
Availability: https://gcc.gnu.org/git/?p=gcc.git;a=tree;f=libgfortran
License: GPL-3.0-with-GCC-exception
  Copyright (C) 2002-2017 Free Software Foundation, Inc.
  Libgfortran is free software; you can redistribute it and/or modify
  it under the terms of the GNU General Public License as published by
  the Free Software Foundation; either version 3, or (at your option)
  any later version.
  Libgfortran is distributed in the hope that it will be useful,
  but WITHOUT ANY WARRANTY; without even the implied warranty of
  MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
  GNU General Public License for more details.
  Under Section 7 of GPL version 3, you are granted additional
  permissions described in the GCC Runtime Library Exception, version
  3.1, as published by the Free Software Foundation.
  You should have received a copy of the GNU General Public License and
  a copy of the GCC Runtime Library Exception along with this program;
  see the files COPYING3 and COPYING.RUNTIME respectively.  If not, see
  <http://www.gnu.org/licenses/>.
Full text of license texts referred to above follows (that they are
listed below does not necessarily imply the conditions apply to the
present binary release):
A copy of the GNU General Public License, v3.0 with GCC Runtime library exception  license can be found
in the 'Standard Licenses' section

Name: libquadmath
Files: numpy/.dylibs/libquadmath*.so
Description: dynamically linked to files compiled with gcc
Availability: https://gcc.gnu.org/git/?p=gcc.git;a=tree;f=libquadmath
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

LICENSES_bundled.txt
--------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.
```

```
Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: tempita
Files: tools/npy_tempita/*
License: MIT
  For details, see tools/npy_tempita/license.txt

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt

Note that the following files are vendored in the repository and sdist but not
installed in built numpy packages:

Name: Meson
Files: vendored-meson/meson/*
License: Apache 2.0
  For license text, see vendored-meson/meson/COPYING

Name: spin
Files: .spin/cmds.py
License: BSD-3
  For license text, see .spin/LICENSE

RECURSIVE LICENSE Mentioned in  LICENSES_bundled.txt
---------------------------------------------------
lapack-lite
Copyright (c) 1992-2022 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2022 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2022 The University of Colorado Denver.  All rights
                        reserved.
Additional copyrights may follow
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
```

```
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-------------------------------------------------------------------------------

tempita
-------
Copyright (c) 2008 Ian Bicking and Contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
-------------------------------------------------------------------------------

dragon4
-------
  Copyright (c) 2022 Ryan Juckett
  Permission is hereby granted, free of charge, to any person obtaining a copy
  of this software and associated documentation files (the "Software"), to
  deal in the Software without restriction, including without limitation the
  rights to use, copy, modify, merge, publish, distribute, sublicense, andor
  sell copies of the Software, and to permit persons to whom the Software is
  furnished to do so, subject to the following conditions:
  The above copyright notice and this permission notice shall be included in
  all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
  IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
  FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
  AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
  LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
  FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
  IN THE SOFTWARE.
-------------------------------------------------------------------------------

libdivide
---------
zlib License
  Copyright (C) 2010 - 2022 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2022 Kim Walisch, <kim.walisch@gmail.com>
  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.
  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:
  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.
```

```
--------------------------------------------------------------------------------

Meson
-----
Copyright (c) 2005-2023, NumPy Developers.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
--------------------------------------------------------------------------------

.spin
-----
Copyright (c) 2021--2022, Scientific Python project
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived from
   this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSES_bundled in different directories:
-----------------------------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: SPLITMIX64
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: Sebastiano Vigna © 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md
```

```
Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
License: MIT
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md

Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: D. E. Shaw Research
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md

Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md

Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md

Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: Jeff Bezanson, Stefan Karpinski, Viral B. Shah, and other contributors
For license text, see/numpy/blob/numpy/random/src/distributions/LICENSE.md

Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA Open Source License (NCSA) and The 3-Clause B
For license text, see/numpy/blob/numpy/random/LICENSE.md

Name: numpy.core.ma
Files: /numpy/blob/numpy/ma/*
License: University of Georgia and Pierre G.F. Gerard-Marchant
For license text, see /numpy/blob/numpy/ma/LICENSE

RECURSIVE LICENSE Mentioned in  LICENSES_bundled in different directories (list above)
--------------------------------------------------------------------------------

Name: SPLITMIX64
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all
copyright and related and neighboring rights to this software to the
public domain worldwide. This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.

Name: SFC64
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
```

```
Name: PHILOX
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
   - Redistributions of source code must retain the above copyright
   notice, this list of conditions, and the following disclaimer.
   -  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions, and the following disclaimer in
   the documentation and/or other materials provided with the distribution.
    - Neither the name of D. E. Shaw Research nor the names of its
    contributors may be used to endorse or promote products derived
    from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

Name: PCG64
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: MT19937
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the
original design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji
Nishimura, All rights reserved.
Redistribution and use in source and binary forms,
with or without modification, are permitted provided that the
following conditions are met:
   -  Redistributions of source code must retain the above
   copyright notice, this list of conditions and the following disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - The names of its contributors may not be used to endorse
    or promote products derived from this software without
    specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
```

```
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING,
BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT
SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
OF THE POSSIBILITY OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval function
from Richard J. Wagner's implementation of the Mersenne Twister RNG,
optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction
, including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of the
Software, and to permit persons to whom the Software is furnished
to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.


Name: Random
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal with the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom
the Software is furnished to do so, subject to the following
```

```
conditions:
Redistributions of source code must retain the above
copyright notice, this list of conditions and the following
disclaimers.
Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimers in the documentation and/or other materials
provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of any
contributors may be used to endorse or promote products
derived from this Software without specific prior written
permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO
THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with
or without modification, are permitted provided that the
following conditions are met:
    - Redistributions of source code must retain the above
    copyright notice, this list of conditions and the following
    disclaimer.
    - Redistributions in binary form must reproduce the
    above copyright notice, this list of conditions and
    the following disclaimer in the documentation and/or
    other materials provided with the distribution.
   - Neither the name of the copyright holder nor the names
   of its contributors may be used to endorse or promote products
   derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original sources,
often the algorithm's designer. Component licenses are located with the component code.

Name: numpy.core.ma
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
```

```
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----------------------------------------------------------------------------

packaging
---------
This software is made available under the terms of *either* of the
licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this
software is made under the terms of *both* these licenses.
Apache-2.0
Copyright (c) Donald Stufft and individual contributors.
All rights reserved.
BSD License:
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

PyYAML
------
Copyright (c) 2017-2021 Ingy döt Net
Copyright (c) 2006-2016 Kirill Simonov
MIT License

regex
-----
This work was derived from the 're' module of CPython 2.6 and CPython 3.1,
copyright (c) 1998-2001 by Secret Labs AB and licensed under CNRI's Python 1.6
license.
All additions and alterations are licensed under the Apache 2.0 License.
   Copyright 2020 Matthew Barnett
   Licensed under the Apache License, Version 2.0 (the ""License"");
   you may not use this file except in compliance with the License.
   You may obtain a copy of the License at
       http://www.apache.org/licenses/LICENSE-2.0
   Unless required by applicable law or agreed to in writing, software
   distributed under the License is distributed on an ""AS IS"" BASIS,
   WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
   See the License for the specific language governing permissions and
   limitations under the License.
 * Copyright (c) 1997-2001 by Secret Labs AB.  All rights reserved.
 *
 * This version of the SRE library can be redistributed under CNRI's
 * Python 1.6 license.  For any other use, please contact Secret Labs
 * AB (info@pythonware.com).
 *
 * Portions of this engine have been developed in cooperation with
 * CNRI.  Hewlett-Packard provided funding for 1.6 integration and
 * other compatibility work.
```

```
requests
--------
Requests
 Copyright 2019 Kenneth Reitz

safetensors
-----------
Apache Software License 2.0

setuptools
----------
MIT License.
The following files include code from opensource projects
(either as direct copies or modified versions):
- `setuptools.schema.json`, `distutils.schema.json`:
    - project: `validate-pyproject` - licensed under MPL-2.0
      (https://github.com/abravalheri/validate-pyproject):
      This Source Code Form is subject to the terms of the Mozilla Public
      License, v. 2.0. If a copy of the MPL was not distributed with this file,
      You can obtain one at https://mozilla.org/MPL/2.0/.

sympy
-----
Copyright (c) 2006-2023 SymPy Development Team
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of SymPy nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

Patches that were taken from the Diofant project (https://github.com/diofant/diofant)
are licensed as:
Copyright (c) 2006-2018 SymPy Development Team,
              2013-2023 Sergey B Kirpichev
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of Diofant or SymPy nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
```

```
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
--------------------------------------------------------------------------------

Submodules taken from the multipledispatch project (https://github.com/mrocklin/multipledispatch)
are licensed as:
Copyright (c) 2014 Matthew Rocklin
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of multipledispatch nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
--------------------------------------------------------------------------------

The files under the directory sympy/parsing/autolev/tests/pydy-example-repo
are directly copied from PyDy project and are licensed as:
Copyright (c) 2009-2023, PyDy Authors
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in the
  documentation and/or other materials provided with the distribution.
* Neither the name of this project nor the names of its contributors may be
  used to endorse or promote products derived from this software without
  specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL PYDY AUTHORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
--------------------------------------------------------------------------------

The files under the directory sympy/parsing/latex
are directly copied from latex2sympy project and are licensed as:
Copyright 2016, latex2sympy
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
```

```
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

threadpoolctl
-------------
Copyright (c) 2019, threadpoolctl contributors
BSD 3-Clause License

tokenizers
----------
MIT License
Copyright (c) 2020 N-API for Rust
copyright = "2020, huggingface
************************************************************
 * Copyright (c) 2014-present, Jon Schlinkert.
 * Licensed under the MIT License.
 */
/*!
 * is-extglob <https://github.com/jonschlinkert/is-extglob>
 *
 * Copyright (c) 2014-2016, Jon Schlinkert.
 * Licensed under the MIT License.
 */
/*!
 * is-glob <https://github.com/jonschlinkert/is-glob>
 *
 * Copyright (c) 2014-2017, Jon Schlinkert.
 * Released under the MIT License.
 */
/*!
 * is-number <https://github.com/jonschlinkert/is-number>
 *
 * Copyright (c) 2014-present, Jon Schlinkert.
 * Released under the MIT License.
 */
/*!
 * is-windows <https://github.com/jonschlinkert/is-windows>
 *
 * Copyright © 2015-2018, Jon Schlinkert.
 * Released under the MIT License.
 */
/*!
 * to-regex-range <https://github.com/micromatch/to-regex-range>
 *
 * Copyright (c) 2015-present, Jon Schlinkert.
 * Released under the MIT License.
 */
/**
  @license
  Copyright (c) 2015, Rebecca Turner

  Permission to use, copy, modify, and/or distribute this software for any
  purpose with or without fee is hereby granted, provided that the above
  copyright notice and this permission notice appear in all copies.

  THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH
  REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND
```

```
  FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT,
  INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM
  LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR
  OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
  PERFORMANCE OF THIS SOFTWARE.
 */
/**
  @license
  Copyright Joyent, Inc. and other Node contributors.
  Permission is hereby granted, free of charge, to any person obtaining a
  copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
  distribute, sublicense, and/or sell copies of the Software, and to permit
  persons to whom the Software is furnished to do so, subject to the
  following conditions:
  The above copyright notice and this permission notice shall be included
  in all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
  OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN
  NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
  DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
  OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE
  USE OR OTHER DEALINGS IN THE SOFTWARE.
*/
/**
  @license
  Copyright Node.js contributors. All rights reserved.
  Permission is hereby granted, free of charge, to any person obtaining a copy
  of this software and associated documentation files (the "Software"), to
  deal in the Software without restriction, including without limitation the
  rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
  sell copies of the Software, and to permit persons to whom the Software is
  furnished to do so, subject to the following conditions:
  The above copyright notice and this permission notice shall be included in
  all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
  IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
  FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
  AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
  LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
  FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
  IN THE SOFTWARE.
*/
/**
  @license
  The MIT License (MIT)
  Copyright (c) 2014 Blake Embrey (hello@blakeembrey.com)
  Permission is hereby granted, free of charge, to any person obtaining a copy
  of this software and associated documentation files (the "Software"), to deal
  in the Software without restriction, including without limitation the rights
  to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
  copies of the Software, and to permit persons to whom the Software is
  furnished to do so, subject to the following conditions:
  The above copyright notice and this permission notice shall be included in
  all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
  IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
  FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
  AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
  LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
  OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
  THE SOFTWARE.
*/

triton
```

```
------
/*
* Copyright 2018-2020 Philippe Tillet
* Copyright 2020-2022 OpenAI
*
* Permission is hereby granted, free of charge, to any person obtaining
* a copy of this software and associated documentation files
* (the "Software"), to deal in the Software without restriction,
* including without limitation the rights to use, copy, modify, merge,
* publish, distribute, sublicense, and/or sell copies of the Software,
* and to permit persons to whom the Software is furnished to do so,
* subject to the following conditions:
*
* The above copyright notice and this permission notice shall be
* included in all copies or substantial portions of the Software.
*
* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
*/

urllib3
-------
MIT License
Copyright (c) 2008-2020 Andrey Petrov and contributors.
```

==========
==========

sentence-transformers/all-MiniLM-L12-v2

```
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
```

==========
==========

shap

```
Copyright (c) 2018 Scott Lundberg
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
```

```
SOFTWARE.

4th Party Dependencies
------------------

cloudpickle
-----------
This module was extracted from the `cloud` package, developed by
PiCloud, Inc.
Copyright (c) 2015, Cloudpickle contributors.
Copyright (c) 2012, Regents of the University of California.
Copyright (c) 2009 PiCloud, Inc. http://www.picloud.com.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
    * Neither the name of the University of California, Berkeley nor the
      names of its contributors may be used to endorse or promote
      products derived from this software without specific prior written
      permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

numba
-----
Copyright (c) 2012, Anaconda, Inc.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

numpy
-----
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
```

```
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----
This binary distribution of NumPy also bundles the following software:

Name: OpenBLAS
Files: extra-dll\libopenb*.dll
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: extra-dll\libopenb*.dll
Description: bundled in OpenBLAS
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
```

```
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSES_bundled.txt
--------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt

RECURSIVE LICENSE Mentioned in  LICENSES_bundled.txt
----------------------------------------------------
lapack-lite
Copyright (c) 1992-2022 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2022 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2022 The University of Colorado Denver.  All rights
                        reserved.
Additional copyrights may follow
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
```

```
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
--------------------------------------------------------------------------------
dragon4
  Copyright (c) 2022 Ryan Juckett
  Permission is hereby granted, free of charge, to any person obtaining a copy
  of this software and associated documentation files (the "Software"), to
  deal in the Software without restriction, including without limitation the
  rights to use, copy, modify, merge, publish, distribute, sublicense, andor
  sell copies of the Software, and to permit persons to whom the Software is
  furnished to do so, subject to the following conditions:
  The above copyright notice and this permission notice shall be included in
  all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
  IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
  FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
  AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
  LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
  FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
  IN THE SOFTWARE.
--------------------------------------------------------------------------------
libdivide
zlib License
  Copyright (C) 2010 - 2022 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2022 Kim Walisch, <kim.walisch@gmail.com>
  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.
  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:
  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.

LICENSES_bundled in different directories:
----------------------------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.
```

```
Name: SPLITMIX64
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: Sebastiano Vigna © 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md

Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
License: MIT
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md

Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: D. E. Shaw Research
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md

Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md

Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md

Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: Jeff Bezanson, Stefan Karpinski, Viral B. Shah, and other contributors
For license text, see/numpy/blob/numpy/random/src/distributions/LICENSE.md

Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA
Open Source License (NCSA) and The 3-Clause BSD License
For license text, see/numpy/blob/numpy/random/LICENSE.md

Name: numpy.core.ma
Files: /numpy/blob/numpy/ma/*
License: University of Georgia and Pierre G.F. Gerard-Marchant
For license text, see /numpy/blob/numpy/ma/LICENSE

RECURSIVE LICENSE Mentioned in  LICENSES_bundled in different directories (list above)
--------------------------------------------------------------------------------

Name: SPLITMIX64
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all
copyright and related and neighboring rights to this software to
the public domain worldwide. This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.

Name: SFC64
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
```

```
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.

Name: PHILOX
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
   - Redistributions of source code must retain the above copyright
   notice, this list of conditions, and the following disclaimer.
   -  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions, and the following disclaimer in
   the documentation and/or other materials provided with the distribution.
    - Neither the name of D. E. Shaw Research nor the names of its
    contributors may be used to endorse or promote products derived
    from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

Name: PCG64
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: MT19937
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the
original design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji
Nishimura, All rights reserved.
Redistribution and use in source and binary forms,
with or without modification, are permitted provided that the
following conditions are met:
   -  Redistributions of source code must retain the above
   copyright notice, this list of conditions and the following disclaimer.
   -  Redistributions in binary form must reproduce the above
```

```
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - The names of its contributors may not be used to endorse
    or promote products derived from this software without
    specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING,
BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT
SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
OF THE POSSIBILITY OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval function
from Richard J. Wagner's implementation of the Mersenne Twister RNG,
optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction
, including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of the
Software, and to permit persons to whom the Software is furnished
to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.


Name: Random
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
```

```
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal with the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom
the Software is furnished to do so, subject to the following
conditions:
Redistributions of source code must retain the above
copyright notice, this list of conditions and the following
disclaimers.
Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimers in the documentation and/or other materials
provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of any
contributors may be used to endorse or promote products
derived from this Software without specific prior written
permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO
THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with
or without modification, are permitted provided that the
following conditions are met:
    - Redistributions of source code must retain the above
    copyright notice, this list of conditions and the following
    disclaimer.
    - Redistributions in binary form must reproduce the
    above copyright notice, this list of conditions and
    the following disclaimer in the documentation and/or
    other materials provided with the distribution.
   - Neither the name of the copyright holder nor the names
   of its contributors may be used to endorse or promote products
   derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original sources, often the algorithm's designer. Componer
--------------------------------------------------------------------------------------------------------------

Name: numpy.core.ma
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
```

```
    * Neither the name of the University of Georgia nor the
       names of its contributors may be used to endorse or promote products
       derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

package_name: packaging
license_type: Apache Software License; BSD License
license_text:
This software is made available under the terms of *either* of the licenses
found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made
under the terms of *both* these licenses.

package_name: pandas
license_type: BSD 3-Clause License
Copyright (c) 2008-2011, AQR Capital Management, LLC, Lambda Foundry, Inc. and PyData Development Team
All rights reserved.
Copyright (c) 2011-2024, Open source contributors.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

package_name: scikit-learn
license_type: BSD License
license_text:
BSD 3-Clause License
Copyright (c) 2007-2024 The scikit-learn developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
```

```
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

package_name: slicer
license_type: MIT License
license_text:
MIT License
Copyright (c) 2023 The InterpretML Contributors
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

package_name: tqdm
license_type: MIT License; Mozilla Public License 2.0 (MPL 2.0)
license_text:
`tqdm` is a product of collaborative work.
Unless otherwise stated, all authors (see commit logs) retain copyright
for their respective work, and release the work under the MIT licence
(text below).
Exceptions or notable authors are listed below
in reverse chronological order:
* files: *
  MPL-2.0 2015-2024 (c) Casper da Costa-Luis
  [casperdcl](https://github.com/casperdcl).
* files: tqdm/_tqdm.py
  MIT 2016 (c) [PR #96] on behalf of Google Inc.
* files: tqdm/_tqdm.py README.rst .gitignore
  MIT 2013 (c) Noam Yorav-Raphael, original author.
[PR #96]: https://github.com/tqdm/tqdm/pull/96

package_name: scipy
license_type: BSD License
license_text:
Copyright (c) 2001-2002 Enthought, Inc. 2003-2024, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
```

```
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----

The SciPy repository and source distributions bundle a number of libraries that
are compatibly licensed.  We list these here.

Name: Decorator
Files: scipy/_lib/decorator.py
License: 2-clause BSD
# Copyright (c) 2005-2015, Michele Simionato
# All rights reserved.
# Redistribution and use in source and binary forms, with or without
# modification, are permitted provided that the following conditions are
# met:
#   Redistributions of source code must retain the above copyright
#   notice, this list of conditions and the following disclaimer.
#   Redistributions in bytecode form must reproduce the above copyright
#   notice, this list of conditions and the following disclaimer in
#   the documentation and/or other materials provided with the
#   distribution.
# THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
# "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
# LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
# A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
# HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
# INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
# BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
# OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
# ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
# TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
# USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
# DAMAGE.

Name: fast_matrix_market
Files: scipy/io/_fast_matrix_market/*
License: 2-clause BSD
  Copyright (C) 2020-2023 Adam Lugowski
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following
conditions are met:
1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: pystreambuf
Files: scipy/io/_fast_matrix_market/src/pystreambuf.h
```

```
License:
Copyright (c) 2006, The Regents of the University of
3-clause BSD
  // SPDX-License-Identifier: BSD-3-Clause
/*
Based on https://gist.github.com/asford/544323a5da7dddad2c9174490eb5ed06
Original license text
--------------------
This component utilizes components derived from cctbx, available at
http://cci.lbl.gov/cctbx_sources/boost_adaptbx/python_streambuf.h
*** License agreement ***
cctbx Copyright (c) 2006, The Regents of the University of
California, through Lawrence Berkeley National Laboratory (subject to
receipt of any required approvals from the U.S. Dept. of Energy).  All
rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
(3) Neither the name of the University of California, Lawrence Berkeley
National Laboratory, U.S. Dept. of Energy nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER
OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
You are under no obligation whatsoever to provide any bug fixes,
patches, or upgrades to the features, functionality or performance of
the source code ("Enhancements") to anyone; however, if you choose to
make your Enhancements available either publicly, or directly to
Lawrence Berkeley National Laboratory, without imposing a separate
written license agreement for such Enhancements, then you hereby grant
the following license: a  non-exclusive, royalty-free perpetual license
to install, use, modify, prepare derivative works, incorporate into
other computer software, distribute, and sublicense such enhancements or
derivative works thereof, in binary and source code form.
*/

Name: fast_float
Files: scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/fast_float/*
License: MIT
  MIT License
Copyright (c) 2021 The fast_float authors
Permission is hereby granted, free of charge, to any
person obtaining a copy of this software and associated
documentation files (the "Software"), to deal in the
Software without restriction, including without
limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software
is furnished to do so, subject to the following
conditions:
The above copyright notice and this permission notice
shall be included in all copies or substantial portions
of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF
```

```
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED
TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT
SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR
IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.
Name: ryu
Files: scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/ryu/*
License: BSL-1.0
  Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ID
Files: scipy/linalg/src/id_dist/*
License: 3-clause BSD
  Copyright 2014 by P.-G. Martinsson, V. Rokhlin,
Y. Shkolnisky, and M. Tygert.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNERS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: L-BFGS-B
Files: scipy/optimize/lbfgsb/*
License:
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>
BSD license
  From the website for the L-BFGS-B code (from at
http://www.ece.northwestern.edu/~nocedal/lbfgsb.html):
"""
L-BFGS-B is a limited-memory quasi-Newton code for bound-constrained
optimization, i.e. for problems where the only constraints are of the
form l<= x <= u.
"""
This is a Python wrapper (using F2PY) written by David M. Cooke
<cookedm@physics.mcmaster.ca> and released as version 0.9 on April 9, 2004.
The wrapper was slightly modified by Joonas Paalasmaa for the 3.0 version
in March 2012.
License of L-BFGS-B (Fortran code)
==================================
```

```
The version included here (in lbfgsb.f) is 3.0 (released April 25, 2011). It was
written by Ciyou Zhu, Richard Byrd, and Jorge Nocedal <nocedal@ece.nwu.edu>. It
carries the following condition for use:
  """
  This software is freely available, but we expect that all publications
  describing work using this software, or all commercial products using it,
  quote at least one of the references given below. This software is released
  under the BSD License.
  References
    * R. H. Byrd, P. Lu and J. Nocedal. A Limited Memory Algorithm for Bound
      Constrained Optimization, (1995), SIAM Journal on Scientific and
      Statistical Computing, 16, 5, pp. 1190-1208.
    * C. Zhu, R. H. Byrd and J. Nocedal. L-BFGS-B: Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (1997),
      ACM Transactions on Mathematical Software, 23, 4, pp. 550 - 560.
    * J.L. Morales and J. Nocedal. L-BFGS-B: Remark on Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (2011),
      ACM Transactions on Mathematical Software, 38, 1.
  """
The Python wrapper
==================
This code uses F2PY (http://cens.ioc.ee/projects/f2py2e/) to generate
the wrapper around the Fortran code.
The Python code and wrapper are copyrighted 2004 by David M. Cooke
<cookedm@physics.mcmaster.ca>.
Example usage
=============
An example of the usage is given at the bottom of the lbfgsb.py file.
Run it with 'python lbfgsb.py'.
License for the Python wrapper
==============================
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: LAPJVsp
Files: scipy/sparse/csgraph/_matching.pyx
License: 3-clause BSD
Copyright 1987-, A. Volgenant/Amsterdam School of Economics,
                 University of Amsterdam
  Distributed under 3-clause BSD license with permission from
  University of Amsterdam.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
    without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
```

```
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
  CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
  ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
  POSSIBILITY OF SUCH DAMAGE.

Name: SuperLU
Files: scipy/sparse/linalg/dsolve/SuperLU/*
License: 3-clause BSD
  Copyright (c) 2003, The Regents of the University of California, through
Lawrence Berkeley National Laboratory (subject to receipt of any required
approvals from U.S. Dept. of Energy)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
(3) Neither the name of Lawrence Berkeley National Laboratory, U.S. Dept. of
Energy nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ARPACK
Files: scipy/sparse/linalg/eigen/arpack/ARPACK/*
License: 3-clause BSD
BSD Software License
Pertains to ARPACK and P_ARPACK
Copyright (c) 1996-2008 Rice University.
Developed by D.C. Sorensen, R.B. Lehoucq, C. Yang, and K. Maschhoff.
All rights reserved.
Arpack has been renamed to arpack-ng.
Copyright (c) 2001-2011 - Scilab Enterprises
Updated by Allan Cornet, Sylvestre Ledru.
Copyright (c) 2010 - Jordi Gutiérrez Hermoso (Octave patch)
Copyright (c) 2007 - Sébastien Fabbro (gentoo patch)
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
```

```
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Qhull
Files: scipy/spatial/qhull/*
License: Qhull license (BSD-like)
                     Qhull, Copyright (c) 1993-2019
                           C.B. Barber
                          Arlington, MA
                              and
       The National Science and Technology Research Center for
        Computation and Visualization of Geometric Structures
                         (The Geometry Center)
                        University of Minnesota
                        email: qhull@qhull.org
This software includes Qhull from C.B. Barber and The Geometry Center.
Qhull is copyrighted as noted above.  Qhull is free software and may
be obtained via http from www.qhull.org.  It may be freely copied, modified,
and redistributed under the following conditions:
1. All copyright notices must remain intact in all files.
2. A copy of this text file must be distributed along with any copies
   of Qhull that you redistribute; this includes copies that you have
   modified, or copies of programs or other software products that
   include Qhull.
3. If you modify Qhull, you must include a notice giving the
   name of the person performing the modification, the date of
   modification, and the reason for such modification.
4. When distributing modified versions of Qhull, or other software
   products that include Qhull, you must provide notice that the original
   source code may be obtained as noted above.
5. There is no warranty or other guarantee of fitness for Qhull, it is
   provided solely "as is".  Bug reports or fixes may be sent to
   qhull_bug@qhull.org; the authors may or may not act on them as
   they desire.

Name: Cephes
Files: scipy/special/cephes/*
License: 3-clause BSD
  Distributed under 3-clause BSD license with permission from the author,
  see https://lists.debian.org/debian-legal/2004/12/msg00295.html
  Cephes Math Library Release 2.8:  June, 2000
  Copyright 1984, 1995, 2000 by Stephen L. Moshier
  This software is derived from the Cephes Math Library and is
  incorporated herein by permission of the author.
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
      * Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
      * Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in the
        documentation and/or other materials provided with the distribution.
      * Neither the name of the <organization> nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
  DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
  (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
```

```
  LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
  ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
  SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Faddeeva
Files: scipy/special/Faddeeva.*
License: MIT
  Copyright (c) 2012 Massachusetts Institute of Technology
  Permission is hereby granted, free of charge, to any person obtaining
  a copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
  distribute, sublicense, and/or sell copies of the Software, and to
  permit persons to whom the Software is furnished to do so, subject to
  the following conditions:
  The above copyright notice and this permission notice shall be
  included in all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
  EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
  NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
  LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
  OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
  WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: qd
Files: scipy/special/cephes/dd_*.[ch]
License: modified BSD license ("BSD-LBNL-License.doc")
  Copyright (c) 2003-2009, The Regents of the University of California,
  through Lawrence Berkeley National Laboratory (subject to receipt of
  any required approvals from U.S. Dept. of Energy) All rights reserved.
  This work was supported by the Director, Office of Science, Division
  of Mathematical, Information, and Computational Sciences of the
  U.S. Department of Energy under contract numbers DE-AC03-76SF00098 and
  DE-AC02-05CH11231.
  1. Redistribution and use in source and binary forms, with or
  without modification, are permitted provided that the following
  conditions are met:
  (1) Redistributions of source code must retain the copyright
  notice, this list of conditions and the following disclaimer.
  (2) Redistributions in binary form must reproduce the copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.
  (3) Neither the name of the University of California, Lawrence
  Berkeley National Laboratory, U.S. Dept. of Energy nor the names
  of its contributors may be used to endorse or promote products
  derived from this software without specific prior written
  permission.
  2. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
  3. You are under no obligation whatsoever to provide any bug fixes,
  patches, or upgrades to the features, functionality or performance of
  the source code ("Enhancements") to anyone; however, if you choose to
  make your Enhancements available either publicly, or directly to
  Lawrence Berkeley National Laboratory, without imposing a separate
  written license agreement for such Enhancements, then you hereby grant
```

```
  the following license: a non-exclusive, royalty-free perpetual license
  to install, use, modify, prepare derivative works, incorporate into
  other computer software, distribute, and sublicense such enhancements
  or derivative works thereof, in binary and source code form.

Name: pypocketfft
Files: scipy/fft/_pocketfft/[pocketfft.h, pypocketfft.cxx]
License: 3-Clause BSD
  Copyright (C) 2010-2019 Max-Planck-Society
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice, this
  list of conditions and the following disclaimer in the documentation and/or
  other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its contributors may
  be used to endorse or promote products derived from this software without
  specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: uarray
Files: scipy/_lib/uarray/*
License: 3-Clause BSD
  BSD 3-Clause License
Copyright (c) 2018, Quansight-Labs
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ampgo
Files: benchmarks/benchmarks/go_benchmark_functions/*.py
License: MIT
  Functions for testing global optimizers, forked from the AMPGO project,
  https://code.google.com/archive/p/ampgo
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
```

```
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: pybind11
Files: no source files are included, however pybind11 binary artifacts are
  included with every binary build of SciPy.
License:
  Copyright (c) 2016 Wenzel Jakob <wenzel.jakob@epfl.ch>, All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice, this
     list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
     and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
  FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: HiGHS
Files: scipy/optimize/_highs/*
License: MIT
  MIT License
Copyright (c) 2024 HiGHS
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: Boost
Files: scipy/_lib/boost_math/*
License: Boost Software License - Version 1.0
  Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
```

```
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: Biasedurn
Files: scipy/stats/biasedurn/*
License 3-Clause BSD
   The C++ code for these distributions without binding to the R project
are available here:
https://www.agner.org/random/stocc.zip
permission to use it in SciPy under the new BSD license.
By Agner Fog. Technical University of Denmark
copyright: 2008 - 2014. GNU General Public License

Name: UNU.RAN
Files: scipy/_lib/unuran/*
License 3-Clause BSD
copyright by Renee Touzin
  Permission was granted on 23 March 2021 by Josef Leydold
  (josef.leydold@wu.ac.at) and Wolfgang Hoermann (hormannw@bound.edu.tr)
to use the UNU.RAN code excluding the uniform random number
generator in src/uniform/mrg31k3p.c (copyright by Renee Touzin)
under the BSD licence.

Name: NumPy
Files: scipy/stats/_rcont/[logfactorial.h,logfactorial.c]
License 3-Clause BSD
  Copyright (c) 2005-2022, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: array-api-compat
```

```
Files: scipy/_lib/array-api-compat/*
License: MIT
 MIT License
Copyright (c) 2022 Consortium for Python Data API Standards
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: Tempita
Files: scipy/_build_utils/tempita/*
License: MIT
License
-------
Copyright (c) 2008 Ian Bicking and Contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: mdspan
Files: scipy/special/special/third_party/kokkos/mdspan.hpp
License: Apache License v2.0 with LLVM Exceptions
// ***********************************************************************
//
//                        Kokkos v. 4.0
//       Copyright (2022) National Technology & Engineering
//               Solutions of Sandia, LLC (NTESS).
//
// Under the terms of Contract DE-NA0003525 with NTESS,
// the U.S. Government retains certain rights in this software.
//
// Part of Kokkos, under the Apache License v2.0 with LLVM Exceptions.
// See https://kokkos.org/LICENSE for license information.
// SPDX-License-Identifier: Apache-2.0 WITH LLVM-exception
Mozilla Public Licence (MPL) v. 2.0 - Exhibit A
-----------------------------------------------
This Source Code Form is subject to the terms of the
Mozilla Public License, v. 2.0.
If a copy of the MPL was not distributed with this project,
You can obtain one at https://mozilla.org/MPL/2.0/.
MIT License (MIT)
-----------------
Copyright (c) 2013 noamraph
```

```
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
-------------------------------------------------------------------------------
Mozilla Public License
Version 2.0
A copy of the Mozilla Public License 2.0  license can be found
in the 'Standard Licenses' section
```

==========
==========

sktime

```
Copyright notice(s):
Copyright (c) 2019 - 2020 The sktime developers.
Copyright 2019 - 2021 (BSD-3-Clause License).
BSD 3-Clause License
Copyright (c) 2019 - present, The sktime developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

4th Party Dependencies
----------------------

joblib
------
Copyright notice(s):
Copyright (c) 2008-2021, The joblib developers.
All rights reserved.
License fulltext:
BSD 3-Clause License
Copyright (c) 2008-2021, The joblib developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
```

```
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

numpy
-----
Copyright (c) 1992-2013 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                        reserved.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura, All rights reserved.
Copyright (c) 2005-2017, NumPy Developers. All rights reserved.
Copyright 2010-2012, D. E. Shaw Research.
All rights reserved.
Copyright (c) 2008 Ian Bicking and Contributors
Copyright (c) 2018 Melissa E. O'Neill
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
Copyright (C) 2010 The Android Open Source Project
Copyright (c) 2005-2022, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----

This binary distribution of NumPy also bundles the following software:
```

```
Name: OpenBLAS
Files: .libs/libopenb*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: .libs/libopenb*.so
Description: bundled in OpenBLAS
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
```

```
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Bundled licenses in numpy (BSD License)
---------------------------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

packaging
---------
Copyright (c) Donald Stufft and individual contributors.
This software is made available under the terms of *either* of the licenses
found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made
under the terms of *both* these licenses.
https://github.com/pypa/packaging/blob/main/LICENSE.APACHE
Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004  license can be found
in the 'Standard Licenses' section

Copyright (c) Donald Stufft and individual contributors.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

pandas
------
Copyright notice(s):
Copyright 2008-2022, the pandas development team.
Copyright (c) 2008-2011, AQR Capital Management, LLC, Lambda Foundry, Inc. and PyData␣
↪Development Team
All rights reserved.
Copyright (c) 2011-2021, Open source contributors.
BSD 3-Clause License
Copyright (c) 2008-2011, AQR Capital Management, LLC, Lambda Foundry, Inc. and PyData Development Team
All rights reserved.
Copyright (c) 2011-2024, Open source contributors.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
```

```
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


scikit-base
-----------
Copyright (c) 2022, skbase Developers
All rights reserved.
# scikit-learn:
Copyright (c) 2007-2023 The scikit-learn developers.
All rights reserved.
# sktime:
Copyright (c) 2019 - present, The sktime developers.
All rights reserved.
Copyright (c) 2022, skbase Developers
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived from
   this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

scikit-learn
------------
Copyright (c) 2007-2021 The scikit-learn developers.
Copyright (c) 2007-2014 The LIBLINEAR Project.
# Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010,
# 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018 Python Software Foundation;
# All Rights Reserved
Copyright (c) 2011 David Warde-Farley <wardefar at iro dot umontreal dot ca>
Copyright (C) 2007-2009 Cournapeau David <cournape@gmail.com>
Copyright (c) 2000-2009 Chih-Chung Chang and Chih-Jen Lin
All rights reserved.
# Copyright (c) 2011, 2012
# Authors: Pietro Berkes,
#          Andreas Muller
Copyright (c) 2011 Olivier Grisel <olivier.grisel@ensta.org>
Copyright (c) 2007 David Cournapeau <cournape@gmail.com>
Copyright (c) 2003-2016  Paul T. McGuire
Copyright (c) 2007-2024 The scikit-learn developers.
```

```
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

scipy
-----
Copyright (c) 2001-2002 Enthought, Inc. 2003-2022, SciPy Developers.
All rights reserved.
Jamfile.v2:# Copyright Daryle Walker, Hubert Holin, John Maddock 2006 - 2007
acosh_data.ipp:// Copyright John Maddock 2008.
acosh_test.hpp://  (C) Copyright Hubert Holin 2003.
almost_equal.ipp:// Copyright (c) 2006 Johan Rade
asinh_data.ipp:// Copyright John Maddock 2008.
asinh_test.hpp://  (C) Copyright Hubert Holin 2003.
assoc_legendre_p.ipp://  (C) Copyright John Maddock 2006-7.
atanh_data.ipp:// Copyright John Maddock 2008.
atanh_test.hpp://  (C) Copyright Hubert Holin 2003.
bessel_i_data.ipp://  Copyright (c) 2007 John Maddock
bessel_i_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_j_large_data.ipp://  Copyright (c) 2007 John Maddock
bessel_k_data.ipp://  Copyright (c) 2007 John Maddock
bessel_k_int_data.ipp://  Copyright (c) 2007 John Maddock
bessel_y01_data.ipp://  Copyright (c) 2007 John Maddock
bessel_yn_data.ipp://  Copyright (c) 2007 John Maddock
bessel_yv_data.ipp://  Copyright (c) 2007 John Maddock
beta_exp_data.ipp://  (C) Copyright John Maddock 2006.
beta_med_data.ipp://  (C) Copyright John Maddock 2006.
beta_small_data.ipp://  (C) Copyright John Maddock 2006.
binomial_data.ipp://  (C) Copyright John Maddock 2006-7.
binomial_large_data.ipp://  (C) Copyright John Maddock 2006-7.
binomial_quantile.ipp://  (C) Copyright John Maddock 2006-7.
cbrt_data.ipp://  (C) Copyright John Maddock 2006-7.
common_factor_test.cpp://  (C) Copyright Daryle Walker 2001, 2006.
compile_test/tools_rational_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_real_cast_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_remez_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_chi_squared_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_complement_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sign_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_digamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_trunc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/constants_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/sf_sinc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_binomial_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_binomial_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_test_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_normal_incl_test.cpp://  Copyright John Maddock 2006.
```

```
compile_test/sf_sinhc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rc_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sin_pi_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sph_harm_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_poisson_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/test_traits.cpp://  Copyright John Maddock 2007.
compile_test/dist_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_cos_pi_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_logistic_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_fpclassify_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_atanh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_precision_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hankel_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/sf_cbrt_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_beta_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_legendre_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_stats_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_polynomial_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_config_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_exponential_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_students_t_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_inv_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_acosh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_beta_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_fisher_f_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_triangular_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/instantiate.hpp://  Copyright John Maddock 2006.
compile_test/instantiate.hpp://  Copyright Paul A. Bristow 2007, 2010.
compile_test/tools_solve_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_next_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/generate.sh://  Copyright John Maddock 2006.
compile_test/distribution_concept_check.cpp://  Copyright John Maddock 2006.
compile_test/sf_laguerre_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tr1_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_ellint_rj_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_chi_squ_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_skew_norm_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_modf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_find_location_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_acos_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rd_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_roots_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_test_data_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_abs_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_t_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_factorials_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_gamma_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_atan_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_powm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hypot_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_pareto_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_round_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_weibull_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/std_real_concept_check.cpp://  Copyright John Maddock 2006.
compile_test/dist_hypergeo_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_inv_chi_sq_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_sqrt1pm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_log1p_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_jacobi_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/dist_neg_binom_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_nc_f_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/dist_find_scale_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_bessel_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_minima_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_asin_incl_test.cpp://  Copyright John Maddock 2006.
```

```
compile_test/dist_extreme_val_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_lanczos_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_uniform_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/test_compile_result.hpp://  Copyright John Maddock 2007.
compile_test/tools_series_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_3_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_rf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_2_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_hermite_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/poison.hpp://  Copyright John Maddock 2013.
compile_test/sf_zeta_incl_test.cpp://  Copyright John Maddock 2007.
compile_test/dist_laplace_incl_test.cpp://  Copyright John Maddock 2008.
compile_test/sf_expint_incl_test.cpp://  Copyright John Maddock 2007.
compile_test/sf_expm1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_bernoulli_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/compl_asinh_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_beta_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/tools_fraction_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_owens_t_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/tools_toms748_inc_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_ellint_1_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_erf_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/main.cpp://  Copyright John Maddock 2009.
compile_test/sf_math_fwd_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/sf_airy_incl_test.cpp://  Copyright John Maddock 2012.
compile_test/dist_lognormal_incl_test.cpp://  Copyright John Maddock 2006.
compile_test/dist_cauchy_incl_test.cpp://  Copyright John Maddock 2006.
complex_test.cpp://  (C) Copyright John Maddock 2005.
digamma_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_neg_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_root_data.ipp://  (C) Copyright John Maddock 2006-7.
digamma_small_data.ipp://  (C) Copyright John Maddock 2006-7.
e_float_concept_check.cpp://  Copyright John Maddock 2011.
ellint_e2_data.ipp://  Copyright (c) 2006 John Maddock
ellint_e_data.ipp://  Copyright (c) 2006 John Maddock
ellint_f_data.ipp://  Copyright (c) 2006 John Maddock
ellint_k_data.ipp://  (C) Copyright John Maddock 2006-7.
ellint_pi2_data.ipp://  Copyright (c) 2006 John Maddock
ellint_pi3_data.ipp://  Copyright (c) 2006 John Maddock
ellint_pi3_large_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rc_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rd_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rf_data.ipp://  Copyright (c) 2006 John Maddock
ellint_rj_data.ipp://  Copyright (c) 2006 John Maddock
erf_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_large_data.ipp://  (C) Copyright John Maddock 2006-7.
erf_small_data.ipp://  (C) Copyright John Maddock 2006.
erfc_inv_big_data.ipp://  (C) Copyright John Maddock 2006-7.
erfc_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
expint_1_data.ipp://  Copyright John Maddock 2008.
expint_data.ipp://  Copyright John Maddock 2008.
expint_small_data.ipp://  Copyright John Maddock 2008.
expinti_data.ipp://  Copyright John Maddock 2008.
expinti_data_double.ipp://  Copyright John Maddock 2008.
expinti_data_long.ipp://  Copyright John Maddock 2008.
functor.hpp://  (C) Copyright John Maddock 2007.
gamma_inv_big_data.ipp://  (C) Copyright John Maddock 2006-7.
gamma_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
gamma_inv_small_data.ipp://  (C) Copyright John Maddock 2006-7.
handle_test_result.hpp://  (C) Copyright John Maddock 2006-7.
hermite.ipp://  (C) Copyright John Maddock 2006-7.
hypergeometric_dist_data2.ipp:// Copyright John Maddock 2008
hypergeometric_test_data.ipp:// Copyright Gautam Sewani 2008
hypot_test.cpp://  (C) Copyright John Maddock 2005.
ibeta_data.ipp://  (C) Copyright John Maddock 2006.
ibeta_int_data.ipp://  (C) Copyright John Maddock 2006-7.
```

```
ibeta_inv_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_inva_data.ipp://  (C) Copyright John Maddock 2006-7.
ibeta_large_data.ipp://  (C) Copyright John Maddock 2006.
ibeta_small_data.ipp://  (C) Copyright John Maddock 2006.
igamma_big_data.ipp://  (C) Copyright John Maddock 2006.
igamma_int_data.ipp://  (C) Copyright John Maddock 2006-7.
igamma_inva_data.ipp://  (C) Copyright John Maddock 2006-7.
igamma_med_data.ipp://  (C) Copyright John Maddock 2006.
igamma_small_data.ipp://  (C) Copyright John Maddock 2006.
jacobi_elliptic.ipp:// Copyright John Maddock 2012.
jacobi_elliptic_small.ipp:// Copyright John Maddock 2012.
jacobi_large_phi.ipp:// Copyright John Maddock 2012.
jacobi_near_1.ipp:// Copyright John Maddock 2012.
laguerre2.ipp://  (C) Copyright John Maddock 2006-7.
laguerre3.ipp://  (C) Copyright John Maddock 2006-7.
legendre_p.ipp://  (C) Copyright John Maddock 2006-7.
legendre_p_large.ipp://  (C) Copyright John Maddock 2006-7.
log1p_expm1_data.ipp://  (C) Copyright John Maddock 2006-7.
log1p_expm1_test.cpp://  Copyright John Maddock 2005.
log1p_expm1_test.cpp://  Copyright Paul A. Bristow 2010
log1p_expm1_test.hpp://  Copyright John Maddock 2005.
log1p_expm1_test.hpp://  Copyright Paul A. Bristow 2010
mpfr_concept_check.cpp://  Copyright John Maddock 2007-8.
mpreal_concept_check.cpp://  Copyright John Maddock 2007-8.
multiprc_concept_check_1.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_2.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_3.cpp://  Copyright John Maddock 2013.
multiprc_concept_check_4.cpp://  Copyright John Maddock 2013.
ncbeta.ipp://  Copyright John Maddock 2008.
ncbeta_big.ipp://  Copyright John Maddock 2008.
nccs.ipp://  Copyright John Maddock 2008.
nccs_big.ipp:// Copyright John Maddock 2008.
nct.ipp:// Copyright John Maddock 2008.
nct_asym.ipp:// Copyright John Maddock 2012.
nct_small_delta.ipp:// Copyright John Maddock 2012.
negative_binomial_quantile.ipp://  (C) Copyright John Maddock 2006-7.
ntl_concept_check.cpp://  Copyright John Maddock 2007-8.
ntl_concept_check.cpp://  Copyright Paul A. Bristow 2009, 2011
owens_t.ipp://  Copyright John Maddock 2012.
owens_t_T7.hpp:// Copyright (C) Benjamin Sobotta 2012
owens_t_large_data.ipp://  Copyright John Maddock 2012.
pch.hpp://  Copyright John Maddock 2008.
pch_light.hpp://  Copyright John Maddock 2008.
poisson_quantile.ipp://  (C) Copyright John Maddock 2006-7.
pow_test.cpp://  (C) Copyright Bruno Lalande 2008.
powm1_sqrtp1m1_test.cpp://  (C) Copyright John Maddock 2006.
powm1_sqrtp1m1_test.hpp://  Copyright John Maddock 2006.
s_.ipp:// Copyright (c) 2006 Johan Rade
s_.ipp:// Copyright (c) 2012 Paul A. Bristow
sinc_test.hpp://  (C) Copyright Hubert Holin 2003.
sinhc_test.hpp://  (C) Copyright Hubert Holin 2003.
special_functions_test.cpp://  (C) Copyright Hubert Holin 2003.
special_functions_test.cpp:    BOOST_TEST_MESSAGE("(C) Copyright Hubert Holin 2003-2005.");
sph_bessel_data.ipp://  Copyright (c) 2007 John Maddock
sph_neumann_data.ipp://  Copyright (c) 2007 John Maddock
spherical_harmonic.ipp://  (C) Copyright John Maddock 2006-7.
std_real_concept_check.cpp://  Copyright John Maddock 2006.
table_type.hpp:// Copyright John Maddock 2012.
test_airy.cpp://  Copyright John Maddock 2012
test_archive.cpp:// Copyright (c) 2006 Johan Rade
test_archive.cpp:// Copyright (c) 2011 Paul A. Bristow - filename changes for boost-trunk.
test_basic_nonfinite.cpp:// Copyright (c) 2006 Johan Rade
test_basic_nonfinite.cpp:// Copyright (c) 2011 Paul A. Bristow comments
test_basic_nonfinite.cpp:// Copyright (c) 2011 John Maddock
test_bernoulli.cpp:// Copyright John Maddock 2006.
test_bernoulli.cpp:// Copyright  Paul A. Bristow 2007, 2012.
test_bessel_airy_zeros.cpp://  Copyright John Maddock 2013
```

```
test_bessel_airy_zeros.cpp://  Copyright Christopher Kormanyos 2013.
test_bessel_airy_zeros.cpp://  Copyright Paul A. Bristow 2013.
test_bessel_hooks.hpp://  (C) Copyright John Maddock 2007.
test_bessel_i.cpp://  (C) Copyright John Maddock 2007.
test_bessel_i.hpp://  (C) Copyright John Maddock 2007.
test_bessel_j.cpp://  (C) Copyright John Maddock 2007.
test_bessel_j.hpp://  (C) Copyright John Maddock 2007.
test_bessel_k.cpp://  Copyright John Maddock 2006, 2007
test_bessel_k.cpp://  Copyright Paul A. Bristow 2007
test_bessel_k.hpp://  (C) Copyright John Maddock 2007.
test_bessel_y.cpp://  (C) Copyright John Maddock 2007.
test_bessel_y.hpp://  (C) Copyright John Maddock 2007.
test_beta.cpp:// Copyright John Maddock 2006.
test_beta.cpp:// Copyright Paul A. Bristow 2007, 2009
test_beta.hpp:// Copyright John Maddock 2006.
test_beta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_beta_dist.cpp:// Copyright John Maddock 2006.
test_beta_dist.cpp:// Copyright  Paul A. Bristow 2007, 2009, 2010, 2012.
test_beta_hooks.hpp://  (C) Copyright John Maddock 2006.
test_binomial.cpp:// Copyright John Maddock 2006.
test_binomial.cpp:// Copyright  Paul A. Bristow 2007.
test_binomial_coeff.cpp://  (C) Copyright John Maddock 2006.
test_binomial_coeff.hpp:// Copyright John Maddock 2006.
test_binomial_coeff.hpp:// Copyright Paul A. Bristow 2007, 2009
test_carlson.cpp://  Copyright 2006 John Maddock
test_carlson.cpp:// Copyright Paul A. Bristow 2007.
test_carlson.hpp:// Copyright John Maddock 2006.
test_carlson.hpp:// Copyright Paul A. Bristow 2007, 2009
test_cauchy.cpp:// Copyright John Maddock 2006, 2007.
test_cauchy.cpp:// Copyright Paul A. Bristow 2007
test_cbrt.cpp://  Copyright John Maddock 2006.
test_cbrt.cpp://  Copyright Paul A. Bristow 2010
test_cbrt.hpp:// Copyright John Maddock 2006.
test_cbrt.hpp:// Copyright Paul A. Bristow 2007, 2009
test_chi_squared.cpp:// Copyright Paul A. Bristow 2006.
test_chi_squared.cpp:// Copyright John Maddock 2007.
test_classify.cpp://  Copyright John Maddock 2006.
test_classify.cpp://  Copyright Paul A. Bristow 2007
test_common_factor_gmpxx.cpp://  (C) Copyright John Maddock 2010.
test_constant_generate.cpp:// Copyright John Maddock 2010.
test_constants.cpp:// Copyright Paul Bristow 2007, 2011.
test_constants.cpp:// Copyright John Maddock 2006, 2011.
test_digamma.cpp://  (C) Copyright John Maddock 2006.
test_digamma.hpp:// Copyright John Maddock 2006.
test_digamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_dist_overloads.cpp:// Copyright John Maddock 2006.
test_dist_overloads.cpp:// Copyright Paul A. Bristow 2007.
test_ellint_1.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_1.cpp://  Copyright John Maddock 2006, 2007
test_ellint_1.cpp://  Copyright Paul A. Bristow 2007
test_ellint_1.hpp:// Copyright John Maddock 2006.
test_ellint_1.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ellint_2.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_2.cpp://  Copyright John Maddock 2006, 2007
test_ellint_2.cpp://  Copyright Paul A. Bristow 2007
test_ellint_2.hpp:// Copyright John Maddock 2006.
test_ellint_2.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ellint_3.cpp://  Copyright Xiaogang Zhang 2006
test_ellint_3.cpp://  Copyright John Maddock 2006, 2007
test_ellint_3.cpp://  Copyright Paul A. Bristow 2007
test_ellint_3.hpp:// Copyright John Maddock 2006.
test_ellint_3.hpp:// Copyright Paul A. Bristow 2007, 2009
test_erf.cpp://  Copyright John Maddock 2006.
test_erf.cpp://  Copyright Paul A. Bristow 2007
test_erf.hpp:// Copyright John Maddock 2006.
test_erf.hpp:// Copyright Paul A. Bristow 2007, 2009
test_erf_hooks.hpp://  (C) Copyright John Maddock 2006.
```

```
test_error_handling.cpp:// Copyright Paul A. Bristow 2006-7.
test_error_handling.cpp:// Copyright John Maddock 2006-7.
test_expint.cpp://  (C) Copyright John Maddock 2007.
test_expint.hpp:// Copyright John Maddock 2006.
test_expint.hpp:// Copyright Paul A. Bristow 2007, 2009
test_expint_hooks.hpp://  (C) Copyright John Maddock 2006.
test_exponential_dist.cpp:// Copyright John Maddock 2006.
test_exponential_dist.cpp:// Copyright Paul A. Bristow 2007.
test_extreme_value.cpp:// Copyright John Maddock 2006.
test_factorials.cpp://  Copyright John Maddock 2006.
test_find_location.cpp:// Copyright John Maddock 2007.
test_find_location.cpp:// Copyright Paul A. Bristow 2007.
test_find_scale.cpp:// Copyright John Maddock 2007.
test_find_scale.cpp:// Copyright Paul A. Bristow 2007.
test_fisher_f.cpp:// Copyright Paul A. Bristow 2006.
test_fisher_f.cpp:// Copyright John Maddock 2007.
test_fisher_f.cpp:   // Distcalc version 1.2 Copyright 2002 H Lohninger, TU Wein
test_gamma.cpp://  (C) Copyright John Maddock 2006.
test_gamma.hpp:// Copyright John Maddock 2006.
test_gamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_gamma_data.ipp://  (C) Copyright John Maddock 2006.
test_gamma_dist.cpp:// Copyright John Maddock 2006.
test_gamma_dist.cpp:// Copyright Paul A. Bristow 2007, 2010.
test_gamma_hooks.hpp://  (C) Copyright John Maddock 2006.
test_geometric.cpp:// Copyright Paul A. Bristow 2010.
test_geometric.cpp:// Copyright John Maddock 2010.
test_hankel.cpp://  Copyright John Maddock 2012
test_hermite.cpp://  Copyright John Maddock 2006, 2007
test_hermite.cpp://  Copyright Paul A. Bristow 2007
test_hermite.hpp:// Copyright John Maddock 2006.
test_hermite.hpp:// Copyright Paul A. Bristow 2007, 2009
test_hypergeometric_dist.cpp:// Copyright John Maddock 2008
test_hypergeometric_dist.cpp:// Copyright Paul A. Bristow
test_hypergeometric_dist.cpp:// Copyright Gautam Sewani
test_ibeta.cpp://  (C) Copyright John Maddock 2006.
test_ibeta.hpp:// Copyright John Maddock 2006.
test_ibeta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ibeta_inv.cpp://  (C) Copyright John Maddock 2006.
test_ibeta_inv.hpp:// Copyright John Maddock 2006.
test_ibeta_inv.hpp:// Copyright Paul A. Bristow 2007, 2009
test_ibeta_inv_ab.cpp://  (C) Copyright John Maddock 2006.
test_ibeta_inv_ab.hpp:// Copyright John Maddock 2006.
test_ibeta_inv_ab.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma.cpp://  (C) Copyright John Maddock 2006.
test_igamma.hpp:// Copyright John Maddock 2006.
test_igamma.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma_inv.cpp://  (C) Copyright John Maddock 2006.
test_igamma_inv.hpp:// Copyright John Maddock 2006.
test_igamma_inv.hpp:// Copyright Paul A. Bristow 2007, 2009
test_igamma_inva.cpp://  (C) Copyright John Maddock 2006.
test_igamma_inva.hpp:// Copyright John Maddock 2006.
test_igamma_inva.hpp:// Copyright Paul A. Bristow 2007, 2009
test_instances/double_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/Jamfile.v2:# Copyright ohn Maddock 2012
test_instances/real_concept_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_6.cpp:// Copyright John Maddock 2011.
```

```
test_instances/ldouble_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_6.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/pch.hpp://  Copyright John Maddock 2012.
test_instances/ldouble_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/long_double_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_7.cpp:// Copyright John Maddock 2011.
test_instances/test_instances.hpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_10.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_9.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_4.cpp:// Copyright John Maddock 2011.
test_instances/real_concept_test_instances_3.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_2.cpp:// Copyright John Maddock 2011.
test_instances/float_test_instances_1.cpp:// Copyright John Maddock 2011.
test_instances/double_test_instances_8.cpp:// Copyright John Maddock 2011.
test_instances/ldouble_test_instances_5.cpp:// Copyright John Maddock 2011.
test_instantiate1.cpp://  Copyright John Maddock 2006.
test_instantiate2.cpp://  Copyright John Maddock 2006.
test_inv_hyp.cpp://  (C) Copyright John Maddock 2006.
test_inverse_chi_squared.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_chi_squared.cpp:// Copyright John Maddock 2010.
test_inverse_chi_squared_distribution.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_chi_squared_distribution.cpp:// Copyright John Maddock 2010.
test_inverse_gamma_distribution.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_gamma_distribution.cpp:// Copyright John Maddock 2010.
test_inverse_gaussian.cpp:// Copyright Paul A. Bristow 2010.
test_inverse_gaussian.cpp:// Copyright John Maddock 2010.
test_jacobi.cpp://  Copyright John Maddock 2012
test_jacobi.hpp:// Copyright John Maddock 2006.
test_jacobi.hpp:// Copyright Paul A. Bristow 2007, 2009
test_laguerre.cpp://  (C) Copyright John Maddock 2006.
test_laguerre.hpp:// Copyright John Maddock 2006.
test_laguerre.hpp:// Copyright Paul A. Bristow 2007, 2009
test_laplace.cpp://  Copyright Thijs van den Berg, 2008.
test_laplace.cpp://  Copyright John Maddock 2008.
test_laplace.cpp://  Copyright Paul A. Bristow 2008, 2009.
test_ldouble_simple.cpp:// Copyright John Maddock 2013.
test_legacy_nonfinite.cpp:// Copyright (c) 2006 Johan Rade
test_legacy_nonfinite.cpp:// Copyright (c) 2011 Paul A. Bristow comments
test_legendre.cpp://  (C) Copyright John Maddock 2006.
test_legendre.hpp:// Copyright John Maddock 2006.
test_legendre.hpp:// Copyright Paul A. Bristow 2007, 2009
test_legendre_hooks.hpp://  (C) Copyright John Maddock 2006.
test_lexical_cast.cpp:// Copyright (c) 2006 Johan Rade
test_lexical_cast.cpp:// Copyright (c) 2011 Paul A. Bristow incorporated Boost.Math
test_logistic_dist.cpp:// Copyright 2008 Gautam Sewani
test_lognormal.cpp:// Copyright John Maddock 2006.
test_lognormal.cpp:// Copyright Paul A. Bristow 2007
test_long_double_support.cpp:// Copyright John Maddock 2009
test_math_fwd.cpp://  Copyright John Maddock 2010.
test_math_fwd.cpp://  Copyright Paul A. Bristow 2010.
test_minima.cpp://  Copyright John Maddock 2006.
test_minima.cpp://  Copyright Paul A. Bristow 2007.
test_nc_beta.cpp:// Copyright John Maddock 2008.
test_nc_chi_squared.cpp:// Copyright John Maddock 2008.
```

```
test_nc_f.cpp:// Copyright John Maddock 2008.
test_nc_t.cpp:// Copyright John Maddock 2008, 2012.
test_nc_t.cpp:// Copyright Paul A. Bristow 2012.
test_ncbeta_hooks.hpp://  (C) Copyright John Maddock 2008.
test_nccs_hooks.hpp://  (C) Copyright John Maddock 2008.
test_negative_binomial.cpp:// Copyright Paul A. Bristow 2007.
test_negative_binomial.cpp:// Copyright John Maddock 2006.
test_next.cpp://  (C) Copyright John Maddock 2008.
test_nonfinite_io.cpp:// Copyright 2011 Paul A. Bristow
test_nonfinite_trap.cpp:// Copyright (c) 2006 Johan Rade
test_nonfinite_trap.cpp:// Copyright (c) 2011 Paul A. Bristow To incorporate into Boost.Math
test_normal.cpp:// Copyright Paul A. Bristow 2010.
test_normal.cpp:// Copyright John Maddock 2007.
test_out_of_range.hpp:// Copyright John Maddock 2012.
test_owens_t.cpp:// Copyright Paul A. Bristow 2012.
test_owens_t.cpp:// Copyright Benjamin Sobotta 2012.
test_pareto.cpp:// Copyright Paul A. Bristow 2007, 2009.
test_pareto.cpp:// Copyright John Maddock 2006.
test_poisson.cpp:// Copyright Paul A. Bristow 2007.
test_poisson.cpp:// Copyright John Maddock 2006.
test_policy.cpp:// Copyright John Maddock 2007.
test_policy_2.cpp:// Copyright John Maddock 2007.
test_policy_3.cpp:// Copyright John Maddock 2007.
test_policy_4.cpp:// Copyright John Maddock 2007.
test_policy_5.cpp:// Copyright John Maddock 2007.
test_policy_6.cpp:// Copyright John Maddock 2007.
test_policy_7.cpp:// Copyright John Maddock 2007.
test_policy_8.cpp:// Copyright John Maddock 2007.
test_policy_sf.cpp://  (C) Copyright John Maddock 2007.
test_print_info_on_type.cpp:// Copyright John Maddock 2010.
test_rational_instances/test_rational_ldouble2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational.hpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float3.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble5.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_ldouble4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_double1.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept4.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_real_concept2.cpp://  (C) Copyright John Maddock 2006-7.
test_rational_instances/test_rational_float1.cpp://  (C) Copyright John Maddock 2006-7.
test_rationals.cpp://  (C) Copyright John Maddock 2006.
test_rayleigh.cpp:// Copyright John Maddock 2006.
test_real_concept.cpp:// Copyright John Maddock 2010
test_real_concept_neg_bin.cpp:// Copyright Paul A. Bristow 2010.
test_real_concept_neg_bin.cpp:// Copyright John Maddock 2010.
test_remez.cpp://  Copyright John Maddock 2006
test_remez.cpp://  Copyright Paul A. Bristow 2007
test_roots.cpp://  (C) Copyright John Maddock 2006.
test_round.cpp://  (C) Copyright John Maddock 2007.
test_sign.cpp:#define BOOST_TEST_MAIN// Copyright John Maddock 2008
test_sign.cpp://  (C) Copyright Paul A. Bristow 2011 (added tests for changesign)
test_signed_zero.cpp:// Copyright 2006 Johan Rade
test_signed_zero.cpp:// Copyright 2011 Paul A. Bristow  To incorporate into Boost.Math
test_signed_zero.cpp:// Copyright 2012 Paul A. Bristow with new tests.
test_skew_normal.cpp:// Copyright Paul A. Bristow 2012.
test_skew_normal.cpp:// Copyright John Maddock 2012.
test_skew_normal.cpp:// Copyright Benjamin Sobotta 2012
```

```
test_spherical_harmonic.cpp://  (C) Copyright John Maddock 2006.
test_students_t.cpp:// Copyright Paul A. Bristow 2006.
test_students_t.cpp:// Copyright John Maddock 2006.
test_tgamma_ratio.cpp://  (C) Copyright John Maddock 2006.
test_tgamma_ratio.hpp:// Copyright John Maddock 2006.
test_tgamma_ratio.hpp:// Copyright Paul A. Bristow 2007, 2009
test_toms748_solve.cpp://  (C) Copyright John Maddock 2006.
test_tr1.c:/*  (C) Copyright John Maddock 2008.
test_tr1.cpp://  (C) Copyright John Maddock 2008.
test_triangular.cpp:// Copyright Paul Bristow 2006, 2007.
test_triangular.cpp:// Copyright John Maddock 2006, 2007.
test_uniform.cpp:// Copyright Paul Bristow 2007.
test_uniform.cpp:// Copyright John Maddock 2006.
test_weibull.cpp:// Copyright John Maddock 2006, 2012.
test_weibull.cpp:// Copyright Paul A. Bristow 2007, 2012.
test_zeta.cpp://  (C) Copyright John Maddock 2006.
test_zeta.hpp:// Copyright John Maddock 2006.
test_zeta.hpp:// Copyright Paul A. Bristow 2007, 2009
test_zeta_hooks.hpp://  (C) Copyright John Maddock 2006.
tgamma_delta_ratio_data.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_delta_ratio_int.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_delta_ratio_int2.ipp://  (C) Copyright John Maddock 2006-7.
tgamma_ratio_data.ipp://  (C) Copyright John Maddock 2006-7.
zeta_1_below_data.ipp://  Copyright John Maddock 2008.
zeta_1_up_data.ipp://  Copyright John Maddock 2008.
zeta_data.ipp://  Copyright John Maddock 2008.
zeta_neg_data.ipp://  Copyright John Maddock 2008.
ztest_max_digits10.cpp: // Copyright 2010 Paul A. Bristow
zztest_max_digits10.cpp:// Copyright 2010 Paul A. Bristow
Copyright (c) 2001-2002 Enthought, Inc. 2003-2022, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----

This binary distribution of SciPy also bundles the following software:

Name: OpenBLAS
Files: .libs/libopenb*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
```

```
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: .libs/libopenb*.so
Description: bundled in OpenBLAS
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
The SciPy repository and source distributions bundle a number of libraries that
are compatibly licensed.  We list these here.


================================================================================
================================================================================
```

SQLAlchemy

```
Copyright 2005-2023 SQLAlchemy authors and contributors <see AUTHORS file>.
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

4th party information
---------------------

greenlet
--------
The following files are derived from Stackless Python and are subject to the
same license as Stackless Python:
 src/greenlet/slp_platformselect.h
 files in src/greenlet/platform/ directory
See LICENSE.PSF and http://www.stackless.com/ for details.
Unless otherwise noted, the files in greenlet have been released under the
following MIT license:
Copyright (c) Armin Rigo, Christian Tismer and contributors
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.

PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2
--------------------------------------------
1. This LICENSE AGREEMENT is between the Python Software Foundation
("PSF"), and the Individual or Organization ("Licensee") accessing and
otherwise using this software ("Python") in source or binary form and
its associated documentation.
2. Subject to the terms and conditions of this License Agreement, PSF hereby
grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce,
analyze, test, perform and/or display publicly, prepare derivative works,
distribute, and otherwise use Python alone or in any derivative version,
provided, however, that PSF's License Agreement and PSF's notice of copyright,
```

```
i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010,
2011 Python Software Foundation; All Rights Reserved" are retained in Python
alone or in any derivative version prepared by Licensee.
3. In the event Licensee prepares a derivative work that is based on
or incorporates Python or any part thereof, and wants to make
the derivative work available to others as provided herein, then
Licensee hereby agrees to include in any such work a brief summary of
the changes made to Python.
4. PSF is making Python available to Licensee on an "AS IS"
basis.  PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND
DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT
INFRINGE ANY THIRD PARTY RIGHTS.
5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON
FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS
A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON,
OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material
breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any
relationship of agency, partnership, or joint venture between PSF and
Licensee.  This License Agreement does not grant permission to use PSF
trademarks or trade name in a trademark sense to endorse or promote
products or services of Licensee, or any third party.
8. By copying, installing or otherwise using Python, Licensee
agrees to be bound by the terms and conditions of this License
Agreement.
== Copyright Notices
Copyright (c) Armin Rigo, Christian Tismer and contributors

typing-extensions
-----------------
Python Software Foundation license, version 2
A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section

ZERO-CLAUSE BSD LICENSE FOR CODE IN THE PYTHON DOCUMENTATION
----------------------------------------------------------------------
Permission to use, copy, modify, and/or distribute this software for any
purpose with or without fee is hereby granted.
THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH
REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT,
INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM
LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR
OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE.
```

```
================================================================================
================================================================================
```

SQLGlot

```
Copyright (c) 2023 Toby Mao

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
```

```
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
```

```
================================================================================
================================================================================
```

statsmodels

```
Copyright (C) 2006, Jonathan E. Taylor
All rights reserved.
Copyright (c) 2006-2008 Scipy Developers.
All rights reserved.
Copyright (c) 2009-2018 statsmodels Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  a. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  b. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in the
     documentation and/or other materials provided with the distribution.
  c. Neither the name of statsmodels nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL STATSMODELS OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

4th Party Dependencies
----------------------
 statsmodels needs "numpy"
  "numpy" has bundled license that are listed below
 statsmodels needs "packaging"
  "packaging" doesn't have any dependencies
 statsmodels needs "pandas"
  "pandas" needs "numpy"
   "numpy" has bundled license that are listed below
  "pandas" needs "python-dateutil"
   "python-dateutil" needs "six"
    "six" doesn't have any dependencies
  "pandas" needs "pytz"
   "pytz" doesn't have any dependencies
  "pandas" needs "tzdata"
   "tzdata" doesn't have any dependencies
 statsmodels needs "patsy"
  "patsy" needs "numpy"
   "numpy" has bundled license that are listed below
  "patsy" needs "six"
   "six" doesn't have any dependencies
 statsmodels needs "scipy"
  "scipy" needs "numpy"
```

```
   "numpy" has bundled license that are listed below
   "scipy" has bundled license that are listed below

package_name: numpy
license_type: BSD License
license_text:
Copyright (c) 2005-2023, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----

The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: tempita
Files: tools/npy_tempita/*
License: MIT
  For details, see tools/npy_tempita/license.txt

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt

Note that the following files are vendored in the repository and sdist but not
installed in built numpy packages:

Name: Meson
Files: vendored-meson/meson/*
License: Apache 2.0
  For license text, see vendored-meson/meson/COPYING

Name: spin
Files: .spin/cmds.py
License: BSD-3
```

```
  For license text, see .spin/LICENSE

----
This distribution of NumPy also bundles the following software:

Name: OpenBLAS
Files: numpy/.dylibs/libopenblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: numpy/.dylibs/libopenblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
```

```
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: libquadmath
Files: numpy/.dylibs/libquadmath*.so
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html
----

The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: tempita
Files: tools/npy_tempita/*
License: MIT
  For details, see tools/npy_tempita/license.txt

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt

Note that the following files are vendored in the repository and sdist but not
installed in built numpy packages:

Name: Meson
Files: vendored-meson/meson/*
License: Apache 2.0
  For license text, see vendored-meson/meson/COPYING

Name: spin
Files: .spin/cmds.py
License: BSD-3
  For license text, see .spin/LICENSE
```

```
----

This distribution of NumPy also bundles the following software:
Name: OpenBLAS
Files: numpy/.dylibs/libopenblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: numpy/.dylibs/libopenblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
```

```
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: libquadmath
Files: numpy/.dylibs/libquadmath*.so
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

package_name: packaging
license_type: Apache Software License; BSD License
license_text:
This software is made available under the terms of *either* of the licenses
found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made
under the terms of *both* these licenses.
Copyright (c) Donald Stufft and individual contributors.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


package_name: pandas
license_type: BSD License
license_text:
BSD 3-Clause License
```

```
Copyright (c) 2008-2011, AQR Capital Management, LLC, Lambda Foundry, Inc.
and PyData Development Team
All rights reserved.
Copyright (c) 2011-2023, Open source contributors.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

package_name: python-dateutil
license_type: Apache Software License; BSD License
license_text:
Copyright 2017- Paul Ganssle <paul@ganssle.io>
Copyright 2017- dateutil contributors (see AUTHORS file)
   Licensed under the Apache License, Version 2.0 (the "License");
   you may not use this file except in compliance with the License.
   You may obtain a copy of the License at
       http://www.apache.org/licenses/LICENSE-2.0
   Unless required by applicable law or agreed to in writing, software
   distributed under the License is distributed on an "AS IS" BASIS,
   WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
   See the License for the specific language governing permissions and
   limitations under the License.
The above license applies to all contributions after 2017-12-01, as well as
all contributions that have been re-licensed (see AUTHORS file for the list of
contributors who have re-licensed their code).
--------------------------------------------------------------------------------
dateutil - Extensions to the standard Python datetime module.
Copyright (c) 2003-2011 - Gustavo Niemeyer <gustavo@niemeyer.net>
Copyright (c) 2012-2014 - Tomi Pieviläinen <tomi.pievilainen@iki.fi>
Copyright (c) 2014-2016 - Yaron de Leeuw <me@jarondl.net>
Copyright (c) 2015-     - Paul Ganssle <paul@ganssle.io>
Copyright (c) 2015-     - dateutil contributors (see AUTHORS file)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    * Redistributions of source code must retain the above copyright notice,
      this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above copyright notice,
      this list of conditions and the following disclaimer in the documentation
      and/or other materials provided with the distribution.
    * Neither the name of the copyright holder nor the names of its
      contributors may be used to endorse or promote products derived from
      this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
```

```
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The above BSD License Applies to all code, even that also covered by Apache 2.0.
---

package_name: six
license_type: MIT License
license_text:
Copyright (c) 2010-2020 Benjamin Peterson
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.


package_name: pytz
license_type: MIT License
license_text:
Copyright (c) 2003-2019 Stuart Bishop <stuart@stuartbishop.net>
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.


package_name: tzdata
license_type: Apache Software License
license_text:
Apache Software License 2.0
Copyright (c) 2020, Paul Ganssle (Google)
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

package_name: patsy
license_type: BSD License
license_text:
```

```
The bulk of Patsy is distributed under a simple 2-clause BSD license:
    Copyright (C) 2011-2012, Patsy Developers. All rights reserved.
    Redistribution and use in source and binary forms, with or without
    modification, are permitted provided that the following conditions are
    met:
       1. Redistributions of source code must retain the above copyright
          notice, this list of conditions and the following disclaimer.
       2. Redistributions in binary form must reproduce the above
          copyright notice, this list of conditions and the following
          disclaimer in the documentation and/or other materials provided
          with the distribution.
    THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
    ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
    LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
    A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
    HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
    SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
    LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
    DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
    THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
    (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
    OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
The module patsy.compat contains code derived from the Python
standard library, and is covered by the following license:

    PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2
    --------------------------------------------
    1. This LICENSE AGREEMENT is between the Python Software Foundation
    ("PSF"), and the Individual or Organization ("Licensee") accessing and
    otherwise using this software ("Python") in source or binary form and
    its associated documentation.
    2. Subject to the terms and conditions of this License Agreement, PSF hereby
    grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce,
    analyze, test, perform and/or display publicly, prepare derivative works,
    distribute, and otherwise use Python alone or in any derivative version,
    provided, however, that PSF's License Agreement and PSF's notice of copyright,
    i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010,
    2011, 2012 Python Software Foundation; All Rights Reserved" are retained in Python
    alone or in any derivative version prepared by Licensee.
    3. In the event Licensee prepares a derivative work that is based on
    or incorporates Python or any part thereof, and wants to make
    the derivative work available to others as provided herein, then
    Licensee hereby agrees to include in any such work a brief summary of
    the changes made to Python.
    4. PSF is making Python available to Licensee on an "AS IS"
    basis.  PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
    IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND
    DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
    FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT
    INFRINGE ANY THIRD PARTY RIGHTS.
    5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON
    FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS
    A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON,
    OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
    6. This License Agreement will automatically terminate upon a material
    breach of its terms and conditions.
    7. Nothing in this License Agreement shall be deemed to create any
    relationship of agency, partnership, or joint venture between PSF and
    Licensee.  This License Agreement does not grant permission to use PSF
    trademarks or trade name in a trademark sense to endorse or promote
    products or services of Licensee, or any third party.
    8. By copying, installing or otherwise using Python, Licensee
    agrees to be bound by the terms and conditions of this License
    Agreement.
As per item (3), we are required to provide a brief summary of
changes. For this, see comments in patsy/compat.py.
```

```
package_name: scipy
license_type: BSD License
license_text:
Copyright (c) 2001-2002 Enthought, Inc. 2003-2024, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----
The SciPy repository and source distributions bundle a number of libraries that
are compatibly licensed.  We list these here.

Name: Decorator
Files: scipy/_lib/decorator.py
License: 2-clause BSD
  # Copyright (c) 2005-2015, Michele Simionato
# All rights reserved.
# Redistribution and use in source and binary forms, with or without
# modification, are permitted provided that the following conditions are
# met:
#   Redistributions of source code must retain the above copyright
#   notice, this list of conditions and the following disclaimer.
#   Redistributions in bytecode form must reproduce the above copyright
#   notice, this list of conditions and the following disclaimer in
#   the documentation and/or other materials provided with the
#   distribution.
# THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
# "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
# LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
# A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
# HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
# INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
# BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
# OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
# ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
# TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
# USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
# DAMAGE.

Name: fast_matrix_market
Files: scipy/io/_fast_matrix_market/*
License: 2-clause BSD
  Copyright (C) 2020-2023 Adam Lugowski
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
```

```
1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials provided
with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


Name: pystreambuf
Files: scipy/io/_fast_matrix_market/src/pystreambuf.h
License:
Copyright (c) 2006, The Regents of the University of
3-clause BSD
  // SPDX-License-Identifier: BSD-3-Clause
/*
Based on https://gist.github.com/asford/544323a5da7dddad2c9174490eb5ed06
This component utilizes components derived from cctbx, available at
http://cci.lbl.gov/cctbx_sources/boost_adaptbx/python_streambuf.h
*** License agreement ***
cctbx Copyright (c) 2006, The Regents of the University of
California, through Lawrence Berkeley National Laboratory (subject to
receipt of any required approvals from the U.S. Dept. of Energy).  All
rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
(3) Neither the name of the University of California, Lawrence Berkeley
National Laboratory, U.S. Dept. of Energy nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER
OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
You are under no obligation whatsoever to provide any bug fixes,
patches, or upgrades to the features, functionality or performance of
the source code ("Enhancements") to anyone; however, if you choose to
make your Enhancements available either publicly, or directly to
Lawrence Berkeley National Laboratory, without imposing a separate
written license agreement for such Enhancements, then you hereby grant
the following license: a  non-exclusive, royalty-free perpetual license
to install, use, modify, prepare derivative works, incorporate into
other computer software, distribute, and sublicense such enhancements or
derivative works thereof, in binary and source code form.
```

```
*/

Name: fast_float
Files: scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/fast_float/*
License: MIT
  MIT License
Copyright (c) 2021 The fast_float authors
Permission is hereby granted, free of charge, to any
person obtaining a copy of this software and associated
documentation files (the "Software"), to deal in the
Software without restriction, including without
limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software
is furnished to do so, subject to the following
conditions:
The above copyright notice and this permission notice
shall be included in all copies or substantial portions
of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED
TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT
SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR
IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ryu
Files: scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/ryu/*
License: BSL-1.0
  Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ID
Files: scipy/linalg/src/id_dist/*
License: 3-clause BSD
  Copyright 2014 by P.-G. Martinsson, V. Rokhlin,
Y. Shkolnisky, and M. Tygert.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNERS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
```

```
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: L-BFGS-B
Files: scipy/optimize/lbfgsb/*
License:
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>
BSD license
  From the website for the L-BFGS-B code (from at
http://www.ece.northwestern.edu/~nocedal/lbfgsb.html):

"""
L-BFGS-B is a limited-memory quasi-Newton code for bound-constrained
optimization, i.e. for problems where the only constraints are of the
form l<= x <= u.
"""
This is a Python wrapper (using F2PY) written by David M. Cooke
<cookedm@physics.mcmaster.ca> and released as version 0.9 on April 9, 2004.
The wrapper was slightly modified by Joonas Paalasmaa for the 3.0 version
in March 2012.

License of L-BFGS-B (Fortran code)
==================================
The version included here (in lbfgsb.f) is 3.0 (released April 25, 2011). It was
written by Ciyou Zhu, Richard Byrd, and Jorge Nocedal <nocedal@ece.nwu.edu>. It
carries the following condition for use:
  """
  This software is freely available, but we expect that all publications
  describing work using this software, or all commercial products using it,
  quote at least one of the references given below. This software is released
  under the BSD License.
  References
    * R. H. Byrd, P. Lu and J. Nocedal. A Limited Memory Algorithm for Bound
      Constrained Optimization, (1995), SIAM Journal on Scientific and
      Statistical Computing, 16, 5, pp. 1190-1208.
    * C. Zhu, R. H. Byrd and J. Nocedal. L-BFGS-B: Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (1997),
      ACM Transactions on Mathematical Software, 23, 4, pp. 550 - 560.
    * J.L. Morales and J. Nocedal. L-BFGS-B: Remark on Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (2011),
      ACM Transactions on Mathematical Software, 38, 1.
  """
The Python wrapper
==================
This code uses F2PY (http://cens.ioc.ee/projects/f2py2e/) to generate
the wrapper around the Fortran code.
The Python code and wrapper are copyrighted 2004 by David M. Cooke
<cookedm@physics.mcmaster.ca>.
Example usage
=============
An example of the usage is given at the bottom of the lbfgsb.py file.
Run it with 'python lbfgsb.py'.
License for the Python wrapper
==============================
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
```

```
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: LAPJVsp
Files: scipy/sparse/csgraph/_matching.pyx
License: 3-clause BSD
Copyright 1987-, A. Volgenant/Amsterdam School of Economics,
                University of Amsterdam
  Distributed under 3-clause BSD license with permission from
  University of Amsterdam.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
    without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
  CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
  ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
  POSSIBILITY OF SUCH DAMAGE.


Name: SuperLU
Files: scipy/sparse/linalg/dsolve/SuperLU/*
License: 3-clause BSD
  Copyright (c) 2003, The Regents of the University of California, through
Lawrence Berkeley National Laboratory (subject to receipt of any required
approvals from U.S. Dept. of Energy)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
(3) Neither the name of Lawrence Berkeley National Laboratory, U.S. Dept. of
Energy nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ARPACK
Files: scipy/sparse/linalg/eigen/arpack/ARPACK/*
License: 3-clause BSD
BSD Software License
```

```
Pertains to ARPACK and P_ARPACK
Copyright (c) 1996-2008 Rice University.
Developed by D.C. Sorensen, R.B. Lehoucq, C. Yang, and K. Maschhoff.
All rights reserved.
Arpack has been renamed to arpack-ng.
Copyright (c) 2001-2011 - Scilab Enterprises
Updated by Allan Cornet, Sylvestre Ledru.
Copyright (c) 2010 - Jordi Gutiérrez Hermoso (Octave patch)
Copyright (c) 2007 - Sébastien Fabbro (gentoo patch)
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Qhull
Files: scipy/spatial/qhull/*
License: Qhull license (BSD-like)
                     Qhull, Copyright (c) 1993-2019
                           C.B. Barber
                          Arlington, MA
                              and
       The National Science and Technology Research Center for
        Computation and Visualization of Geometric Structures
                         (The Geometry Center)
                        University of Minnesota
                        email: qhull@qhull.org
This software includes Qhull from C.B. Barber and The Geometry Center.
Qhull is copyrighted as noted above.  Qhull is free software and may
be obtained via http from www.qhull.org.  It may be freely copied, modified,
and redistributed under the following conditions:
1. All copyright notices must remain intact in all files.
2. A copy of this text file must be distributed along with any copies
   of Qhull that you redistribute; this includes copies that you have
   modified, or copies of programs or other software products that
   include Qhull.
3. If you modify Qhull, you must include a notice giving the
   name of the person performing the modification, the date of
   modification, and the reason for such modification.
4. When distributing modified versions of Qhull, or other software
   products that include Qhull, you must provide notice that the original
   source code may be obtained as noted above.
5. There is no warranty or other guarantee of fitness for Qhull, it is
   provided solely "as is".  Bug reports or fixes may be sent to
   qhull_bug@qhull.org; the authors may or may not act on them as
   they desire.

Name: Cephes
Files: scipy/special/cephes/*
```

```
License: 3-clause BSD
  Distributed under 3-clause BSD license with permission from the author,
  see https://lists.debian.org/debian-legal/2004/12/msg00295.html
  Cephes Math Library Release 2.8:  June, 2000
  Copyright 1984, 1995, 2000 by Stephen L. Moshier
  This software is derived from the Cephes Math Library and is
  incorporated herein by permission of the author.
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
      * Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
      * Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in the
        documentation and/or other materials provided with the distribution.
      * Neither the name of the <organization> nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
  DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
  (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
  LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
  ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
  SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Faddeeva
Files: scipy/special/Faddeeva.*
License: MIT
  Copyright (c) 2012 Massachusetts Institute of Technology
  Permission is hereby granted, free of charge, to any person obtaining
  a copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
  distribute, sublicense, and/or sell copies of the Software, and to
  permit persons to whom the Software is furnished to do so, subject to
  the following conditions:
  The above copyright notice and this permission notice shall be
  included in all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
  EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
  NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
  LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
  OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
  WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: qd
Files: scipy/special/cephes/dd_*.[ch]
License: modified BSD license ("BSD-LBNL-License.doc")
  Copyright (c) 2003-2009, The Regents of the University of California,
  through Lawrence Berkeley National Laboratory (subject to receipt of
  any required approvals from U.S. Dept. of Energy) All rights reserved.
  This work was supported by the Director, Office of Science, Division
  of Mathematical, Information, and Computational Sciences of the
  U.S. Department of Energy under contract numbers DE-AC03-76SF00098 and
  DE-AC02-05CH11231.
  1. Redistribution and use in source and binary forms, with or
  without modification, are permitted provided that the following
  conditions are met:
  (1) Redistributions of source code must retain the copyright
  notice, this list of conditions and the following disclaimer.
  (2) Redistributions in binary form must reproduce the copyright
  notice, this list of conditions and the following disclaimer in
```

```
  the documentation and/or other materials provided with the
  distribution.
  (3) Neither the name of the University of California, Lawrence
  Berkeley National Laboratory, U.S. Dept. of Energy nor the names
  of its contributors may be used to endorse or promote products
  derived from this software without specific prior written
  permission.
  2. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
  3. You are under no obligation whatsoever to provide any bug fixes,
  patches, or upgrades to the features, functionality or performance of
  the source code ("Enhancements") to anyone; however, if you choose to
  make your Enhancements available either publicly, or directly to
  Lawrence Berkeley National Laboratory, without imposing a separate
  written license agreement for such Enhancements, then you hereby grant
  the following license: a non-exclusive, royalty-free perpetual license
  to install, use, modify, prepare derivative works, incorporate into
  other computer software, distribute, and sublicense such enhancements
  or derivative works thereof, in binary and source code form.

Name: pypocketfft
Files: scipy/fft/_pocketfft/[pocketfft.h, pypocketfft.cxx]
License: 3-Clause BSD
  Copyright (C) 2010-2019 Max-Planck-Society
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice, this
  list of conditions and the following disclaimer in the documentation and/or
  other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its contributors may
  be used to endorse or promote products derived from this software without
  specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: uarray
Files: scipy/_lib/uarray/*
License: 3-Clause BSD
  BSD 3-Clause License
Copyright (c) 2018, Quansight-Labs
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
```

```
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ampgo
Files: benchmarks/benchmarks/go_benchmark_functions/*.py
License: MIT
  Functions for testing global optimizers, forked from the AMPGO project,
  Coded by Andrea Gavana
  https://code.google.com/archive/p/ampgo

Name: pybind11
Files: no source files are included, however pybind11 binary artifacts are
  included with every binary build of SciPy.
License:
  Copyright (c) 2016 Wenzel Jakob <wenzel.jakob@epfl.ch>, All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice, this
     list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
     and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
  FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: HiGHS
Files: scipy/optimize/_highs/*
License: MIT
  MIT License
Copyright (c) 2024 HiGHS
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
```

```
SOFTWARE.

Name: Boost
Files: scipy/_lib/boost_math/*
License: Boost Software License - Version 1.0
  Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: Biasedurn
Files: scipy/stats/biasedurn/*
License 3-Clause BSD
   The C++ code for these distributions without binding to the R project
are available here:
https://www.agner.org/random/stocc.zip
permission to use it in SciPy under the new BSD license.
By Agner Fog. Technical University of Denmark
copyright: 2008 - 2014. GNU General Public License

Name: UNU.RAN
Files: scipy/_lib/unuran/*
License 3-Clause BSD
copyright by Renee Touzin
  Permission was granted on 23 March 2021 by Josef Leydold
  (josef.leydold@wu.ac.at) and Wolfgang Hoermann (hormannw@bound.edu.tr)
to use the UNU.RAN code excluding the uniform random number
generator in src/uniform/mrg31k3p.c (copyright by Renee Touzin)
under the BSD licence.

Name: NumPy
Files: scipy/stats/_rcont/[logfactorial.h,logfactorial.c]
License 3-Clause BSD
  opyright (c) 2005-2022, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
```

```
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: array-api-compat
Files: scipy/_lib/array-api-compat/*
License: MIT
 MIT License
Copyright (c) 2022 Consortium for Python Data API Standards
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: Tempita
Files: scipy/_build_utils/tempita/*
License: MIT
License
-------
Copyright (c) 2008 Ian Bicking and Contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
This distribution of SciPy also bundles the following software:

Name: OpenBLAS
Files: scipy/.dylibs/libopenblas*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
```

```
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


Name: LAPACK
Files: scipy/.dylibs/libopenblas*.so
Description: bundled in OpenBLAS
Availability: https://github.com/OpenMathLib/OpenBLAS/
License: BSD-3-Clause-Attribution
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: libquadmath
Files: scipy/.dylibs/libquadmath*.so
License: LGPL-2.1-or-later
    GCC Quad-Precision Math Library
```

```
    Copyright (C) 2010-2019 Free Software Foundation, Inc.
    Written by Francois-Xavier Coudert  <fxcoudert@gcc.gnu.org>
    This file is part of the libquadmath library.
    Libquadmath is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.
    Libquadmath is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.
    https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html
```

```
================================================================================
================================================================================
```

Tesseract

```
Tesseract
---------
 * File:        tesseract.cpp
 * Description: Main program for merge of tess and editor.
 * Author:      Ray Smith
 *
 * (C) Copyright 1992, Hewlett-Packard Ltd.
 ** Licensed under the Apache License, Version 2.0 (the "License");
 ** you may not use this file except in compliance with the License.
 ** You may obtain a copy of the License at
 ** http://www.apache.org/licenses/LICENSE-2.0
 ** Unless required by applicable law or agreed to in writing, software
 ** distributed under the License is distributed on an "AS IS" BASIS,
 ** WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 ** See the License for the specific language governing permissions and
 ** limitations under the License.
 *
 **********************************************************************/

## License

    The code in this repository is licensed under the Apache License, Version 2.0 (the "License");
    you may not use this file except in compliance with the License.
    You may obtain a copy of the License at

       http://www.apache.org/licenses/LICENSE-2.0

    Unless required by applicable law or agreed to in writing, software
    distributed under the License is distributed on an "AS IS" BASIS,
    WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
    See the License for the specific language governing permissions and
    limitations under the License.

**NOTE**: This software depends on other packages that may be licensed under different open source licenses

Tesseract uses [Leptonica library](http://leptonica.com/) which essentially
uses a [BSD 2-clause license](http://leptonica.com/about-the-license.html).

## Dependencies

Tesseract uses [Leptonica library](https://github.com/DanBloomberg/leptonica)
for opening input images (e.g. not documents like pdf).
It is suggested to use leptonica with built-in support for [zlib](https://zlib.net),
[png](https://sourceforge.net/projects/libpng) and
[tiff](http://www.simplesystems.org/libtiff) (for multipage tiff).

A copy of the Apache License v2.0, January 2004 license can be found
```

```
in the 'Standard Licenses' section

4th party components
=============
leptonica
-----------
/*====================================================================*
 -  Copyright (C) 2001 Leptonica.  All rights reserved.
 -
 -  Redistribution and use in source and binary forms, with or without
 -  modification, are permitted provided that the following conditions
 -  are met:
 -  1. Redistributions of source code must retain the above copyright
 -     notice, this list of conditions and the following disclaimer.
 -  2. Redistributions in binary form must reproduce the above
 -     copyright notice, this list of conditions and the following
 -     disclaimer in the documentation and/or other materials
 -     provided with the distribution.
 -
 -  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
 -  ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
 -  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
 -  A PARTICULAR PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL ANY
 -  CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
 -  EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
 -  PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
 -  PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY
 -  OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
 -  NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 -  SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 *====================================================================*/


giflib
-----
The GIFLIB distribution is Copyright (c) 1997  Eric S. Raymond

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.


jpeg
-----
/*
 * jversion.h
 *
 * Copyright (C) 1991-2024, Thomas G. Lane, Guido Vollbeding.
 * This file is part of the Independent JPEG Group's software.
 * For conditions of distribution and use, see the accompanying README file.
 *
 * This file contains software version identification.
 */
```

```
openjpeg
-----------
/*
 * The copyright in this software is being made available under the 2-clauses
 * BSD License, included below. This software may be subject to other third
 * party and contributor rights, including patent rights, and no such rights
 * are granted under this license.
 *
 * Copyright (c) 2002-2014, Universite catholique de Louvain (UCL), Belgium
 * Copyright (c) 2002-2014, Professor Benoit Macq
 * Copyright (c) 2003-2014, Antonin Descampe
 * Copyright (c) 2003-2009, Francois-Olivier Devaux
 * Copyright (c) 2005, Herve Drolon, FreeImage Team
 * Copyright (c) 2002-2003, Yannick Verschueren
 * Copyright (c) 2001-2003, David Janssens
 * Copyright (c) 2011-2012, Centre National d'Etudes Spatiales (CNES), France
 * Copyright (c) 2012, CS Systemes d'Information, France
 *
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the above copyright
 *    notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in the
 *    documentation and/or other materials provided with the distribution.
 *
 * THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS `AS IS'
 * AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
 * LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
 * CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
 * SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
 * INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
 * CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
 * ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
 * POSSIBILITY OF SUCH DAMAGE.
 */


libpng
-------
COPYRIGHT NOTICE, DISCLAIMER, and LICENSE
=========================================

PNG Reference Library License version 2
---------------------------------------

 * Copyright (c) 1995-2024 The PNG Reference Library Authors.
 * Copyright (c) 2018-2024 Cosmin Truta.
 * Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson.
 * Copyright (c) 1996-1997 Andreas Dilger.
 * Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

The software is supplied "as is", without warranty of any kind,
express or implied, including, without limitation, the warranties
of merchantability, fitness for a particular purpose, title, and
non-infringement.  In no event shall the Copyright owners, or
anyone distributing the software, be liable for any damages or
other liability, whether in contract, tort or otherwise, arising
from, out of, or in connection with the software, or the use or
other dealings in the software, even if advised of the possibility
```

```
of such damage.

Permission is hereby granted to use, copy, modify, and distribute
this software, or portions hereof, for any purpose, without fee,
subject to the following restrictions:

 1. The origin of this software must not be misrepresented; you
    must not claim that you wrote the original software.  If you
    use this software in a product, an acknowledgment in the product
    documentation would be appreciated, but is not required.

 2. Altered source versions must be plainly marked as such, and must
    not be misrepresented as being the original software.

 3. This Copyright notice may not be removed or altered from any
    source or altered source distribution.


tiff
---
# LibTIFF license

Copyright © 1988-1997 Sam Leffler\
Copyright © 1991-1997 Silicon Graphics, Inc.

Permission to use, copy, modify, distribute, and sell this software and
its documentation for any purpose is hereby granted without fee, provided
that (i) the above copyright notices and this permission notice appear in
all copies of the software and related documentation, and (ii) the names of
Sam Leffler and Silicon Graphics may not be used in any advertising or
publicity relating to the software without the specific, prior written
permission of Sam Leffler and Silicon Graphics.

THE SOFTWARE IS PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND,
EXPRESS, IMPLIED OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY
WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL SAM LEFFLER OR SILICON GRAPHICS BE LIABLE FOR
ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND,
OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS,
WHETHER OR NOT ADVISED OF THE POSSIBILITY OF DAMAGE, AND ON ANY THEORY OF
LIABILITY, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE
OF THIS SOFTWARE.


libwebp
---------
Copyright (c) 2010, Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

  * Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.

  * Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in
    the documentation and/or other materials provided with the
    distribution.

  * Neither the name of Google nor the names of its contributors may
    be used to endorse or promote products derived from this software
    without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
```

```
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

==========
==========

TinyXML2

```
/*
Original code by Lee Thomason (www.grinninglizard.com)

This software is provided 'as-is', without any express or implied
warranty. In no event will the authors be held liable for any
damages arising from the use of this software.

Permission is granted to anyone to use this software for any
purpose, including commercial applications, and to alter it and
redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must
not claim that you wrote the original software. If you use this
software in a product, an acknowledgment in the product documentation
would be appreciated but is not required.

2. Altered source versions must be plainly marked as such, and
must not be misrepresented as being the original software.

3. This notice may not be removed or altered from any source
distribution.
*/
```

==========
==========

tornado

```
Copyright: Facebook
License: Apache 2.0

                                 Apache License
                           Version 2.0, January 2004
                        https://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
```

==========
==========

transformers

```
Copyright 2018- The Hugging Face team. All rights reserved.


                                 Apache License
```

```
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


4th Party Dependencies
--------------------

filelock
--------
This is free and unencumbered software released into the public domain.
Anyone is free to copy, modify, publish, use, compile, sell, or
distribute this software, either in source code form or as a compiled
binary, for any purpose, commercial or non-commercial, and by any
means.
In jurisdictions that recognize copyright laws, the author or authors
of this software dedicate any and all copyright interest in the
software to the public domain. We make this dedication for the benefit
of the public at large and to the detriment of our heirs and
successors. We intend this dedication to be an overt act of
relinquishment in perpetuity of all present and future rights to this
software under copyright law.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.
For more information, please refer to http://unlicense.org

huggingface-hub
---------------
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

Fsspec
------
Copyright (c) 2018, Martin Durant
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
packaging
---------
This software is made available under the terms of *either* of the licenses
found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made
under the terms of *both* these licenses.

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

Copyright (c) Donald Stufft and individual contributors.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    1. Redistributions of source code must retain the above copyright notice,
       this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


pyyaml
------
Copyright (c) 2017-2021 Ingy döt Net
Copyright (c) 2006-2016 Kirill Simonov
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

requests
--------
Requests
Copyright 2019 Kenneth Reitz

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
```

```
certifi
-------
This package contains a modified version of ca-bundle.crt:
ca-bundle.crt -- Bundle of CA Root Certificates
Certificate data from Mozilla as of: Thu Nov  3 19:04:19 2011#
This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt).  This file can be found in the mozilla source tree:
http://mxr.mozilla.org/mozilla/source/security/nss/lib/ckfw/builtins/certdata.txt?raw=1#
It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php_curl, or with
an Apache+mod_ssl webserver for SSL client authentication.
Just configure this file as the SSLCACertificateFile.#
***** BEGIN LICENSE BLOCK *****
This Source Code Form is subject to the terms of the Mozilla Public License,
v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain
one at http://mozilla.org/MPL/2.0/.
***** END LICENSE BLOCK *****
@(#) $RCSfile: certdata.txt,v $ $Revision: 1.80 $ $Date: 2011/11/03 15:11:58 $


charset-normalizer
------------------
Copyright (c) 2019 TAHRI Ahmed R.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


idna
----
BSD 3-Clause License
Copyright (c) 2013-2021, Kim Davies All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
- Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
- Neither the name of the copyright holder nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
```

```
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


urllib3
-------
Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.


tqdm
----
`tqdm` is a product of collaborative work.
Unless otherwise stated, all authors (see commit logs) retain copyright
for their respective work, and release the work under the MIT licence
(text below).
Exceptions or notable authors are listed below
in reverse chronological order:
* files: *
  MPLv2.0 2015-2021 (c) Casper da Costa-Luis
  [casperdcl](https://github.com/casperdcl).
* files: tqdm/_tqdm.py
  MIT 2016 (c) [PR #96] on behalf of Google Inc.
* files: tqdm/_tqdm.py setup.py README.rst MANIFEST.in .gitignore
  MIT 2013 (c) Noam Yorav-Raphael, original author.
[PR #96]: https://github.com/tqdm/tqdm/pull/96

Mozilla Public Licence (MPL) v. 2.0 - Exhibit A
-----------------------------------------------
This Source Code Form is subject to the terms of the
Mozilla Public License, v. 2.0.
If a copy of the MPL was not distributed with this project,
You can obtain one at https://mozilla.org/MPL/2.0/.
---

typing-extensions
-----------------
Python Software Foundation license, version 2
A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section


numpy
-----
BSD 3 clause
Copyright (c) 2005-2022, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
```

```
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


regex
-----
This work was derived from the 're' module of CPython 2.6 and CPython 3.1,
copyright (c) 1998-2001 by Secret Labs AB and licensed under CNRI's Python 1.6
license.
All additions and alterations are licensed under the Apache 2.0 License.

                                Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

Safetensors
-----------
Copyright (c) 2018, Martin Durant
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


tokenizers
----------
                                Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
```

```
---
From PyTorch:
Copyright (c) 2016-     Facebook, Inc            (Adam Paszke)
Copyright (c) 2014-     Facebook, Inc            (Soumith Chintala)
Copyright (c) 2011-2014 Idiap Research Institute (Ronan Collobert)
Copyright (c) 2012-2014 Deepmind Technologies    (Koray Kavukcuoglu)
Copyright (c) 2011-2012 NEC Laboratories America (Koray Kavukcuoglu)
Copyright (c) 2011-2013 NYU                      (Clement Farabet)
Copyright (c) 2006-2010 NEC Laboratories America (Ronan Collobert, Leon Bottou, Iain Melvin, Jason Weston)
Copyright (c) 2006      Idiap Research Institute (Samy Bengio)
Copyright (c) 2001-2004 Idiap Research Institute (Ronan Collobert, Samy Bengio, Johnny Mariethoz)

From Caffe2:
Copyright (c) 2016-present, Facebook Inc. All rights reserved.
All contributions by Facebook:
Copyright (c) 2016 Facebook Inc.
All contributions by Google:
Copyright (c) 2015 Google Inc.
All rights reserved.
All contributions by Yangqing Jia:
Copyright (c) 2015 Yangqing Jia
All rights reserved.
All contributions by Kakao Brain:
Copyright 2019-2020 Kakao Brain
All contributions by Cruise LLC:
Copyright (c) 2022 Cruise LLC.
All rights reserved.
All contributions from Caffe:
Copyright(c) 2013, 2014, 2015, the respective contributors
All rights reserved.
All other contributions:
Copyright(c) 2015, 2016 the respective contributors
All rights reserved.
Caffe2 uses a copyright model similar to Caffe: each contributor holds
copyright over their contributions to Caffe2. The project versioning records
all such contribution and copyright details. If a contributor wants to further
mark their specific copyright on a particular contribution, they should
indicate their copyright solely in the commit message of the change when it is
committed.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. Neither the names of Facebook, Deepmind Technologies, NYU, NEC Laboratories America
   and IDIAP Research Institute nor the names of its contributors may be
   used to endorse or promote products derived from this software without
   specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.
---

Torch  dependencies:
Name : nvidia-cublas-cu11
License : Nvidia License
```

```
IMPORTANT NOTICE -- READ CAREFULLY:
This License For Customer Use of NVIDIA Software ("LICENSE") is the
agreement which governs use of the software of NVIDIA Corporation
and its subsidiaries ("NVIDIA") downloadable herefrom, including
computer software and associated printed materials ("SOFTWARE").
By downloading, installing, copying, or otherwise using the SOFTWARE,
you agree to be bound by the terms of this LICENSE. If you do not
agree to the terms of this LICENSE, do not download the SOFTWARE.
RECITALS
    Use of NVIDIA's products requires three elements: the SOFTWARE,
    the hardware on a graphics controller board, and a personal
    computer. The SOFTWARE is protected by copyright laws and
    international copyright treaties, as well as other intellectual
    property laws and treaties. The SOFTWARE is not sold, and
    instead is only licensed for use, strictly in accordance with
    this document. The hardware is protected by various patents,
    and is sold, but this LICENSE does not cover that sale, since
    it may not necessarily be sold as a package with the SOFTWARE.
    This LICENSE sets forth the terms and conditions of the
    SOFTWARE LICENSE only.
1. DEFINITIONS
    1.1 Customer. Customer means the entity or individual that
    downloads the SOFTWARE.
2. GRANT OF LICENSE
    2.1 Rights and Limitations of Grant. NVIDIA hereby grants
    Customer the following non-exclusive, non-transferable
    right to use the SOFTWARE, with the following limitations:
        2.1.1 Rights. Customer may install and use multiple
        copies of the SOFTWARE on a shared computer or
        concurrently on different computers, and make multiple
        back-up copies of the SOFTWARE, solely for Customer's
        use within Customer's Enterprise. "Enterprise" shall
        mean individual use by Customer or any legal entity
        (such as a corporation or university) and the
        subsidiaries it owns by more than fifty percent (50%).
        2.1.2 Linux/FreeBSD Exception. Notwithstanding the f
        oregoing terms of Section 2.1.1, SOFTWARE designed
        exclusively for use on the Linux or FreeBSD operating
        systems, or other operating systems derived from the
        source code to these operating systems, may be copied
        and redistributed, provided that the binary files
        thereof are not modified in any way (except for
        unzipping of compressed files).
        2.1.3 Limitations.
            No Reverse Engineering. Customer may not
            reverse engineer, decompile, or disassemble
            the SOFTWARE, nor attempt in any other manner
            to obtain the source code.
            No Separation of Components. The SOFTWARE is
            licensed as a single product. Its component
            parts may not be separated for use on more
            than one computer, nor otherwise used separately
            from the other parts.
            No Rental. Customer may not rent or lease the
            SOFTWARE to someone else.
3. TERMINATION
    This LICENSE will automatically terminate if Customer
    fails to comply with any of the terms and conditions
    hereof. In such event, Customer must destroy all
    copies of the SOFTWARE and all of its component parts.
    Defensive Suspension. If Customer commences or
    participates in any legal proceeding against NVIDIA,
    then NVIDIA may, in its sole discretion, suspend or
    terminate all license grants and any other rights provided
    under this LICENSE during the pendency of such legal proceedings.
4. COPYRIGHT
    All title and copyrights in and to the SOFTWARE (including but
```

```
    not limited to all images, photographs, animations, video, audio,
    music, text, and other information incorporated into the SOFTWARE),
    the accompanying printed materials, and any copies of the SOFTWARE,
    are owned by NVIDIA, or its suppliers. The SOFTWARE is protected by
    copyright laws and international treaty provisions. Accordingly,
    Customer is required to treat the SOFTWARE like any other
    copyrighted material, except as otherwise allowed pursuant
    to this LICENSE and that it may make one copy of the SOFTWARE
    solely for backup or archive purposes.
5. APPLICABLE LAW
    This LICENSE shall be deemed to have been made in, and shall
    be construed pursuant to, the laws of the State of Delaware.
    The United Nations Convention on Contracts for the
    International Sale of Goods is specifically disclaimed.
6. DISCLAIMER OF WARRANTIES AND LIMITATION ON LIABILITY
    6.1 No Warranties. TO THE MAXIMUM EXTENT PERMITTED BY
    APPLICABLE LAW, THE SOFTWARE IS PROVIDED "AS IS" AND NVIDIA
    AND ITS SUPPLIERS DISCLAIM ALL WARRANTIES OF ANY KIND OR NATURE,
    WHETHER EXPRESS, IMPLIED, OR STATUTORY, RELATING TO OR ARISING
    FROM THE SOFTWARE, INCLUDING, BUT NOT LIMITED TO, IMPLIED
    WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE,
    TITLE, AND NON-INFRINGEMENT. Without limiting the foregoing,
    you are solely responsible for determining and verifying that
    the SOFTWARE that you obtain and install is the appropriate
    version for your model of graphics controller board, operating
    system, and computer hardware.
    6.2 No Liability for Consequential Damages. TO THE MAXIMUM EXTENT
    PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL NVIDIA OR ITS
    SUPPLIERS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, OR
    CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION,
    DAMAGES FOR LOSS OF BUSINESS PROFITS, LOSS OF DATA, BUSINESS
    INTERRUPTION, LOSS OF BUSINESS INFORMATION, OR ANY OTHER PECUNIARY
    LOSS) ARISING OUT OF THE USE OF OR INABILITY TO USE THE SOFTWARE,
    EVEN IF NVIDIA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.
7. SYSTEM UPDATES
    7.1 Customer hereby agrees and acknowledges that the SOFTWARE may
    access, collect non-personally identifiable information about,
    update, and configure Customer's system in order to properly
    optimize such system for use with the SOFTWARE. To the extent
    that Customer uses the SOFTWARE, Customer hereby consents to all
    of the foregoing, and represent and warrant that Customer has the
    right to grant such consent. In addition, Customer agrees that
    Customer is solely responsible for maintaining appropriate data
    backups and system restore points for Customer's system, and
    that NVIDIA will have no responsibility for any damage or loss
    to such system (including loss of data or access) arising from
    or relating to (a) any changes to the configuration, application
    settings, environment variables, registry, drivers, BIOS, or
    other attributes of the system (or any part of such system)
    initiated through the SOFTWARE; or (b) installation of any
    SOFTWARE or third party software patches through the NVIDIA
    Update Service. The SOFTWARE may contain links to websites and
    services. We encourage you to review the privacy statements on
    those sites and services that you choose to visit so that you
    can understand how they may collect, use and share your personal
    information. NVIDIA is not responsible for the privacy statements
    or practices of sites and services controlled by other companies
    or organizations.
    7.2 Registration and Customer Information. Customer represents
    and warrants that the non-personally identifiable information
    that Customer has furnished in connection with its registration
    for the SOFTWARE is complete and accurate. Customer also
    acknowledges that from time to time, NVIDIA may collect, use,
    and disclose such information about Customer and/or Customer's
    system in connection with the SOFTWARE in accordance with NVIDIA's
    privacy policy, available at
    https://www.nvidia.com/en-us/about-nvidia/privacy-policy/.
```

```
    If Customer does not wish the SOFTWARE to provide system
    updates as described in this Section 7, uncheck "Automatically
    check for updates" in the "Preferences" tab of the applicable
    NVIDIA Update control panel for the SOFTWARE.
8. MISCELLANEOUS
    If any provision of this LICENSE is inconsistent with, or
    cannot be fully enforced under, the law, such provision will
    be construed as limited to the extent necessary to be consistent
    with and fully enforceable under the law. This LICENSE is the final,
    complete and exclusive agreement between the parties relating to the
    subject matter hereof, and supersedes all prior or contemporaneous
    understandings and agreements relating to such subject matter,
    whether oral or written. This LICENSE may only be modified in
    writing signed by an authorized officer of NVIDIA. Customer agrees
    that it will not ship, transfer or export the SOFTWARE into any
    country, or use the SOFTWARE in any manner, prohibited by the
    United States Bureau of Industry and Security or any export
    laws, restrictions or regulations.
---

Name : Setuptools
License: MIT
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.
---

Name : wheel
License : MIT
MIT License
Copyright (c) 2012 Daniel Holth <dholth@fastmail.fm> and contributors
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.
---

Name : nvidia-cuda-nvrtc-cu11
License : Nvidia License
See License Text under 'nvidia-cublas-cu11' above
---

Name : nvidia-cuda-runtime-cu11
License : Nvidia License
```

```
See License Text under 'nvidia-cublas-cu11' above
---

Name : nvidia-cudnn-cu11
License : Nvidia License
See License Text under 'nvidia-cublas-cu11' above
---

Name : Nvidia-cublas-cu11
License : Nvidia License
See License Text under 'nvidia-cublas-cu11' above
---

Name : torchaudio
License : BSD 2-Clause license
BSD 2-Clause License
Copyright (c) 2017 Facebook Inc. (Soumith Chintala),
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: FP16
License: MIT
The MIT License (MIT)
Copyright (c) 2017 Facebook Inc.
Copyright (c) 2017 Georgia Institute of Technology
Copyright 2019 Google LLC
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE
OR OTHER DEALINGS IN THE SOFTWARE.
---

Name: FXdiv
License: MIT
The MIT License (MIT)
Copyright (c) 2017 Facebook Inc.
Copyright (c) 2016-2017 Marat Dukhan
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
```

```
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
---

Name: NNPACK
License: BSD-2-Clause
Copyright (c) 2017 Facebook Inc.
Copyright (c) 2015-2017, Georgia Institute of Technology
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: QNNPACK
License: BSD-3-Clause
BSD License
For QNNPACK software
Copyright (c) Facebook, Inc. and its affiliates. All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name Facebook nor the names of its contributors may be used to
   endorse or promote products derived from this software without specific
   prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---
```

```
Name: XNNPACK
License: BSD-3-Clause
BSD License
For XNNPACK software
Copyright (c) Facebook, Inc. and its affiliates. All rights reserved.
Copyright 2019 Google LLC
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
* Neither the name Facebook nor the names of its contributors may be used to
   endorse or promote products derived from this software without specific
   prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: benchmark
License: Apache-2.0
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
---

Name: clog
License: BSD-2-Clause
Files: third_party/cpuinfo/deps/clog
Copyright (C) 2018 Marat Dukhan
Copyright (c) 2017-2018 Facebook Inc.
Copyright (c) 2017 Georgia Institute of Technology
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: cpuinfo
License: BSD-2-Clause
Copyright (c) 2019 Google LLC
```

```
Copyright (c) 2017-2018 Facebook Inc.
Copyright (C) 2012-2017 Georgia Institute of Technology
Copyright (C) 2010-2012 Marat Dukhan
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: cudnn_frontend
License: MIT
Files: third_party/cudnn_frontend
/*
 * Copyright (c) 2020, NVIDIA CORPORATION. All rights reserved.
 *
 * Permission is hereby granted, free of charge, to any person obtaining a
 * copy of this software and associated documentation files (the "Software"),
 * to deal in the Software without restriction, including without limitation
 * the rights to use, copy, modify, merge, publish, distribute, sublicense,
 * and/or sell copies of the Software, and to permit persons to whom the
 * Software is furnished to do so, subject to the following conditions:
 *
 * The above copyright notice and this permission notice shall be included in
 * all copies or substantial portions of the Software.
 *
 * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
 * IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
 * FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL
 * THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
 * LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
 * FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
 * DEALINGS IN THE SOFTWARE.
 */
---

Name: dart
License: Apache-2.0
The code in lib/flat_buffers.dart is based on code that was releases under the
following license:
Copyright 2012, the Dart project authors. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
      copyright notice, this list of conditions and the following
      disclaimer in the documentation and/or other materials provided
      with the distribution.
    * Neither the name of Google Inc. nor the names of its
      contributors may be used to endorse or promote products derived
      from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
```

```
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

To the extent permissible, the changes to that code and the other assets in
this package are licensed under the Apache2 license:


                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

---

Name: eigen
License: BSD-3-Clause
/*
 Copyright (c) 2011, Intel Corporation. All rights reserved.
 Redistribution and use in source and binary forms, with or without modification,
 are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name of Intel Corporation nor the names of its contributors may
   be used to endorse or promote products derived from this software without
   specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
 ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR
 ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
 ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
*/
---

Name: enum
License: BSD-3-Clause
Copyright (c) 2013, Ethan Furman.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
    Redistributions of source code must retain the above
    copyright notice, this list of conditions and the
    following disclaimer.
    Redistributions in binary form must reproduce the above
    copyright notice, this list of conditions and the following
    disclaimer in the documentation and/or other materials
    provided with the distribution.
    Neither the name Ethan Furman nor the names of any
    contributors may be used to endorse or promote products
```

```
    derived from this software without specific prior written
    permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.
---

Name: fbgemm
License: BSD-3-Clause
Files: third_party/fbgemm
  For details, see: third_party/fbgemm/LICENSE
BSD License
For FBGEMM software
Copyright (c) Meta Platforms, Inc. and affiliates. All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name Facebook nor the names of its contributors may be used to
   endorse or promote products derived from this software without specific
   prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: flatbuffers
License: Apache-2.0

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
---

Name: fmt
License: MIT with exception
Copyright (c) 2012 - present, Victor Zverovich
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
```

```
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
--- Optional exception to the license ---
As an exception, if, as a result of your compiling your source code, portions
of this Software are embedded into a machine-executable object form of such
source code, you may redistribute such embedded portions in such object form
without including the above copyright and permission notices.
---

Name: foxi
License: MIT
MIT License
Copyright (c) 2019 Lu Fang
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
---

Name: gloo
License: BSD-3-Clause
BSD License
For Gloo software
Copyright (c) 2017-present, Facebook, Inc. All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name Facebook nor the names of its contributors may be used to
   endorse or promote products derived from this software without specific
   prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: ideep
License: MIT
Copyright (c) 2018 Intel Corporation.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
```

```
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.
---

Name: json
License: MIT
MIT License
Copyright (c) 2013-2021 Niels Lohmann
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
---

Name: kineto
License: BSD-3-Clause
BSD License
For Kineto software
Copyright (c) Facebook, Inc. and its affiliates. All rights reserved.
All contributions by Microsoft:
Copyright (c) Microsoft Corporation. (The Azure AI Platform team)
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name Facebook nor the names of its contributors may be used to
   endorse or promote products derived from this software without specific
   prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: libnop
License: Apache-2.0
```

```
Copyright 2017 The Native Object Protocols Authors
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
    https://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
---

Name: libuv
License: MIT
libuv is licensed for use as follows:
Copyright (c) 2015-present libuv project contributors.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.
---
This license applies to parts of libuv originating from the
https://github.com/joyent/libuv repository:
Copyright Joyent, Inc. and other Node contributors. All rights reserved.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.
---
This license applies to all parts of libuv that are not externally
maintained libraries.
The externally maintained libraries used by libuv are:
  - tree.h (from FreeBSD), copyright Niels Provos. Two clause BSD license.
  - inet_pton and inet_ntop implementations, contained in src/inet.c, are
    copyright the Internet Systems Consortium, Inc., and licensed under the ISC
    license.
  - stdint-msvc2008.h (from msinttypes), copyright Alexander Chemeris. Three
    clause BSD license.
  - pthread-fixes.c, copyright Google Inc. and Sony Mobile Communications AB.
    Three clause BSD license.
  - android-ifaddrs.h, android-ifaddrs.c, copyright Berkeley Software Design
    Inc, Kenneth MacKay and Emergya (Cloud4all, FP7/2007-2013, grant agreement
    n° 289016). Three clause BSD license.
---
```

```
Name: miniz-2.1.0
License: MIT
Copyright 2013-2014 RAD Game Tools and Valve Software
Copyright 2010-2014 Rich Geldreich and Tenacious Software LLC
All Rights Reserved.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.
---

Name: mkl-dnn
License: Apache-2.0
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
---

Name: nccl
License: BSD-3-Clause
 Copyright (c) 2015-2020, NVIDIA CORPORATION. All rights reserved.
 Redistribution and use in source and binary forms, with or without
 modification, are permitted provided that the following conditions
 are met:
  * Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  * Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
    documentation and/or other materials provided with the distribution.
  * Neither the name of NVIDIA CORPORATION, Lawrence Berkeley National
    Laboratory, the U.S. Department of Energy, nor the names of their
    contributors may be used to endorse or promote products derived
    from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
 PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT OWNER OR
 CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
 EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
 PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
 PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY
 OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
 OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 The U.S. Department of Energy funded the development of this software
 under subcontract 7078610 with Lawrence Berkeley National Laboratory.
This code also includes files from the NVIDIA Tools Extension SDK project.
See:
   https://github.com/NVIDIA/NVTX
for more information and license details.
---
```

```
Name: neon2sse
License: BSD-Source-Code
created by Victoria Zhislina, the Senior Application Engineer, Intel Corporation,
victoria.zhislina@intel.com
*** Copyright (C) 2012-2016 Intel Corporation.  All rights reserved.
IMPORTANT: READ BEFORE DOWNLOADING, COPYING, INSTALLING OR USING.
By downloading, copying, installing or using the software you agree to this license.
If you do not agree to this license, do not download, install, copy or use the software.
                              License Agreement
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.
 * The name of the copyright holders may not be used to endorse or promote products
   derived from this software without specific prior written permission.
This software is provided by the copyright holders and contributors "as is" and
any express or implied warranties, including, but not limited to, the implied
warranties of merchantability and fitness for a particular purpose are disclaimed.
In no event shall the Intel Corporation or contributors be liable for any direct,
indirect, incidental, special, exemplary, or consequential damages
(including, but not limited to, procurement of substitute goods or services;
loss of use, data, or profits; or business interruption) however caused
and on any theory of liability, whether in contract, strict liability,
or tort (including negligence or otherwise) arising in any way out of
the use of this software, even if advised of the possibility of such damage.
---

Name: onnx
License: Apache-2.0

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
---

Name: onnx-tensorrt
License: MIT
MIT License
Copyright (c) 2018, NVIDIA CORPORATION. All rights reserved.
Copyright (c) 2018 Open Neural Network Exchange
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
---

Name: protobuf
License: BSD-3-Clause
Copyright 2008 Google Inc.  All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
```

```
notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
    * Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Code generated by the Protocol Buffer compiler is owned by the owner
of the input file used when generating it.  This code is not
standalone and requires a support library to be linked with it.  This
support library is itself covered by the above license.
---

Name: psimd
License: MIT
The MIT License (MIT)
Copyright (c) 2017 Facebook Inc.
Copyright (c) 2014-2017 Georgia Institute of Technology
Copyright 2019 Google LLC
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.
---


Name: pthreadpool
License: BSD-2-Clause
Copyright 2019 Google LLC
Copyright (c) 2017 Facebook Inc.
Copyright (c) 2015-2017 Georgia Institute of Technology
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
```

```
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: pybind11
License: BSD-3-Clause
Copyright (c) 2016 Wenzel Jakob <wenzel.jakob@epfl.ch>, All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors
   may be used to endorse or promote products derived from this software
   without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Please also refer to the file .github/CONTRIBUTING.md, which clarifies licensing of
external contributions to this project including patches, pull requests, etc.
---

Name: python-peachpy
License: BSD-2-Clause
PeachPy license (2-clause BSD)
Copyright (c) 2017, Facebook Inc.
Copyright (c) 2013-2017, Georgia Institute of Technology
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: python-six
License: MIT
Copyright (c) 2010-2017 Benjamin Peterson
Permission is hereby granted, free of charge, to any person obtaining a copy of
```

```
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
---

Name: sleef
License: BSL-1.0
Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.
---

Name: swift
License: Apache-2.0
  For details, see: third_party/flatbuffers/swift/LICENSE

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
---

Name: tb_plugin
License: BSD-3-Clause
BSD License
For Kineto software
Copyright (c) Facebook, Inc. and its affiliates. All rights reserved.
All contributions by Microsoft:
Copyright (c) Microsoft Corporation. (The Azure AI Platform team)
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name Facebook nor the names of its contributors may be used to
   endorse or promote products derived from this software without specific
```

```
   prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: tbb
License: Apache-2.0
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section
---

Name: tensorpipe
License: BSD-3-Clause
BSD License
For TensorPipe software
Copyright (c) Meta Platforms, Inc. and affiliates. All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name Meta nor the names of its contributors may be used to
   endorse or promote products derived from this software without specific
   prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: zstd
License: BSD-3-Clause
BSD License
For Zstandard software
Copyright (c) 2016-present, Facebook, Inc. All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
 * Redistributions of source code must retain the above copyright notice, this
   list of conditions and the following disclaimer.
 * Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 * Neither the name Facebook nor the names of its contributors may be used to
   endorse or promote products derived from this software without specific
   prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
```

```
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Numpy bundeled dependencies licenses
This binary distribution of NumPy also bundles the following software:
Name: OpenBLAS
Files: .libs/libopenb*.so
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: .libs/libopenb*.so
Description: bundled in OpenBLAS
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
```

```
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Bundled licenses in numpy (BSD 3-Clause "New" or "Revised" License)
[https://github.com/numpy/numpy]
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: tempita
Files: tools/npy_tempita/*
License: MIT
  For details, see tools/npy_tempita/license.txt

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt
--------------------------------------------------------------------------------

Name: lapack-lite
License: BSD-3-Clause
Copyright (c) 1992-2013 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2013 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                        reserved.
$COPYRIGHT$
Additional copyrights may follow
$HEADER$
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
```

```
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: tempita
License: MIT
Copyright (c) 2008 Ian Bicking and Contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
---

Name: dragon4
License: MIT
Copyright (c) 2014 Ryan Juckett
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.
---

Name: libdivide
License: Zlib
zlib License
```

```
Copyright (C) 2010 - 2019 ridiculous_fish, <libdivide@ridiculousfish.com>
Copyright (C) 2016 - 2019 Kim Walisch, <kim.walisch@gmail.com>
This software is provided 'as-is', without any express or implied
warranty.  In no event will the authors be held liable for any damages
arising from the use of this software.
Permission is granted to anyone to use this software for any purpose,
including commercial applications, and to alter it and redistribute it
freely, subject to the following restrictions:
1. The origin of this software must not be misrepresented; you must not
    claim that you wrote the original software. If you use this software
    in a product, an acknowledgment in the product documentation would be
    appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be
    misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.
---

The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: SPLITMIX64
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: BSD 3-Clause
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md

Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
License: MIT
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md

Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: BSD 3-Clause
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md

Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md

Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md

Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/distributions/LICENSE.md

Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA Open Source License (NCSA) and The 3-Claus
For license text, see/numpy/blob/numpy/random/LICENSE.md

Name: nympy.core.ma
Files: /numpy/blob/numpy/ma/*
License: BSD 3-Clause
For license text, see /numpy/blob/numpy/ma/LICENSE
--------------------------------------------------------------------------------

Name: SPLITMIX64
License: BSD 3-Clause
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated
all copyright and related and neighboring rights to this software
to the public domain worldwide. This software is distributed without any warranty.
```

```
See http://creativecommons.org/publicdomain/zero/1.0/.
---

Name: SFC64
License: MIT
 © 2005â€"2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
---

Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE
OR OTHER DEALINGS IN THE SOFTWARE.
---

Name: PHILOX
License: BSD 3-Clause
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
   - Redistributions of source code must retain the above copyright
notice, this list of conditions, and the following disclaimer.
   -  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions, and the following
disclaimer in the documentation and/or other materials provided
with the distribution.
    - Neither the name of D. E. Shaw Research nor the names of
its contributors may be used to endorse or promote products derived
from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED
AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF
THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: PCG64
License: MIT
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify,
```

```
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: MT19937
License: MIT
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the
original design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji
Nishimura, All rights reserved.
Redistribution and use in source and binary forms,
with or without modification, are permitted provided that the
following conditions are met:
   -  Redistributions of source code must retain the above
   copyright notice, this list of conditions and the following disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - The names of its contributors may not be used to endorse
    or promote products derived from this software without
    specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING,
BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT
SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
OF THE POSSIBILITY OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval function
from Richard J. Wagner's implementation of the Mersenne Twister RNG,
optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
```

```
License: MIT
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction
, including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of the
Software, and to permit persons to whom the Software is furnished
to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Random
License: dual-licensed under the The University of Illinois/NCSA Open Source License (NCSA) and The 3-Clause B
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal with the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom
the Software is furnished to do so, subject to the following
conditions:
Redistributions of source code must retain the above
copyright notice, this list of conditions and the following
disclaimers.
Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimers in the documentation and/or other materials
provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of any
contributors may be used to endorse or promote products
derived from this Software without specific prior written
permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO
THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with
or without modification, are permitted provided that the
following conditions are met:
    - Redistributions of source code must retain the above
    copyright notice, this list of conditions and the following
    disclaimer.
    - Redistributions in binary form must reproduce the
    above copyright notice, this list of conditions and
    the following disclaimer in the documentation and/or
    other materials provided with the distribution.
   - Neither the name of the copyright holder nor the names
```

```
   of its contributors may be used to endorse or promote products
   derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Components
Many parts of this module have been derived from original sources, often the algorithm's designer. Componer
---

Name: nympy.core.ma
License: BSD 3-Clause
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2021 Peter Plantinga
                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/
A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

Mozilla Public License
Version 2.0
A copy of the Mozilla Public License 2.0  license can be found
in the 'Standard Licenses' section

Python Software Foundation license, version 2
A copy of the Python Software Foundation license, version 2 license can be found
in the 'Standard Licenses' section

ZERO-CLAUSE BSD LICENSE FOR CODE IN THE PYTHON DOCUMENTATION
----------------------------------------------------------------------
Permission to use, copy, modify, and/or distribute this software for any
purpose with or without fee is hereby granted.
THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH
REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT,
INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM
```

```
LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR
OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE.
---

Name: GCC runtime library
Files: .libs/libgfortran*.so
Description: dynamically linked to files compiled with gcc
Availability: https://gcc.gnu.org/viewcvs/gcc/
License: GPLv3 + runtime exception
  Copyright (C) 2002-2017 Free Software Foundation, Inc.
  Libgfortran is free software; you can redistribute it and/or modify
  it under the terms of the GNU General Public License as published by
  the Free Software Foundation; either version 3, or (at your option)
  any later version.
  Libgfortran is distributed in the hope that it will be useful,
  but WITHOUT ANY WARRANTY; without even the implied warranty of
  MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
  GNU General Public License for more details.
  Under Section 7 of GPL version 3, you are granted additional
  permissions described in the GCC Runtime Library Exception, version
  3.1, as published by the Free Software Foundation.
  You should have received a copy of the GNU General Public License and
  a copy of the GCC Runtime Library Exception along with this program;
  see the files COPYING3 and COPYING.RUNTIME respectively.  If not, see
  <http://www.gnu.org/licenses/>.
Full text of license texts referred to above follows (that they are
listed below does not necessarily imply the conditions apply to the
present binary release):
A copy of the GNU General Public License, v3.0 with GCC Runtime library exception  license can be found
in the 'Standard Licenses' section

Bundled Dependencies of Scipy
The SciPy repository and source distributions bundle a number of libraries that
are compatibly licensed.  We list these here.

Name: Decorator
Files: scipy/_lib/decorator.py
License: 2-clause BSD
  For details, see the header inside scipy/_lib/decorator.py

Name: ID
Files: scipy/linalg/src/id_dist/*
License: 3-clause BSD
  For details, see scipy/linalg/src/id_dist/doc/doc.tex

Name: L-BFGS-B
Files: scipy/optimize/lbfgsb/*
License: BSD license
  For details, see scipy/optimize/lbfgsb/README

Name: LAPJVsp
Files: scipy/sparse/csgraph/_matching.pyx
License: 3-clause BSD
Copyright 1987-, A. Volgenant/Amsterdam School of Economics,
                 University of Amsterdam
  Distributed under 3-clause BSD license with permission from
  University of Amsterdam.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
```

```
    without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
  CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
  ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
  POSSIBILITY OF SUCH DAMAGE.

Name: SuperLU
Files: scipy/sparse/linalg/dsolve/SuperLU/*
License: 3-clause BSD
  For details, see scipy/sparse/linalg/dsolve/SuperLU/License.txt

Name: ARPACK
Files: scipy/sparse/linalg/eigen/arpack/ARPACK/*
License: 3-clause BSD
  For details, see scipy/sparse/linalg/eigen/arpack/ARPACK/COPYING

Name: Qhull
Files: scipy/spatial/qhull/*
License: Qhull license (BSD-like)
  For details, see scipy/spatial/qhull/COPYING.txt

Name: Cephes
Files: scipy/special/cephes/*
License: 3-clause BSD
  Distributed under 3-clause BSD license with permission from the author,
  see https://lists.debian.org/debian-legal/2004/12/msg00295.html
  Cephes Math Library Release 2.8:  June, 2000
  Copyright 1984, 1995, 2000 by Stephen L. Moshier
  This software is derived from the Cephes Math Library and is
  incorporated herein by permission of the author.
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
      * Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
      * Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in the
        documentation and/or other materials provided with the distribution.
      * Neither the name of the <organization> nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
  DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
  (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
  LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
  ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
  SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Faddeeva
Files: scipy/special/Faddeeva.*
License: MIT
  Copyright (c) 2012 Massachusetts Institute of Technology
  Permission is hereby granted, free of charge, to any person obtaining
  a copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
```

```
  distribute, sublicense, and/or sell copies of the Software, and to
  permit persons to whom the Software is furnished to do so, subject to
  the following conditions:
  The above copyright notice and this permission notice shall be
  included in all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
  EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
  NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
  LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
  OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
  WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: qd
Files: scipy/special/cephes/dd_*.[ch]
License: modified BSD license ("BSD-LBNL-License.doc")
  This work was supported by the Director, Office of Science, Division
  of Mathematical, Information, and Computational Sciences of the
  U.S. Department of Energy under contract numbers DE-AC03-76SF00098 and
  DE-AC02-05CH11231.
  Copyright (c) 2003-2009, The Regents of the University of California,
  through Lawrence Berkeley National Laboratory (subject to receipt of
  any required approvals from U.S. Dept. of Energy) All rights reserved.
  1. Redistribution and use in source and binary forms, with or
  without modification, are permitted provided that the following
  conditions are met:
  (1) Redistributions of source code must retain the copyright
  notice, this list of conditions and the following disclaimer.
  (2) Redistributions in binary form must reproduce the copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.
  (3) Neither the name of the University of California, Lawrence
  Berkeley National Laboratory, U.S. Dept. of Energy nor the names
  of its contributors may be used to endorse or promote products
  derived from this software without specific prior written
  permission.
  2. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
  3. You are under no obligation whatsoever to provide any bug fixes,
  patches, or upgrades to the features, functionality or performance of
  the source code ("Enhancements") to anyone; however, if you choose to
  make your Enhancements available either publicly, or directly to
  Lawrence Berkeley National Laboratory, without imposing a separate
  written license agreement for such Enhancements, then you hereby grant
  the following license: a non-exclusive, royalty-free perpetual license
  to install, use, modify, prepare derivative works, incorporate into
  other computer software, distribute, and sublicense such enhancements
  or derivative works thereof, in binary and source code form.

Name: pypocketfft
Files: scipy/fft/_pocketfft/[pocketfft.h, pypocketfft.cxx]
License: 3-Clause BSD
  For details, see scipy/fft/_pocketfft/LICENSE.md

Name: uarray
Files: scipy/_lib/uarray/*
License: 3-Clause BSD
```

```
  For details, see scipy/_lib/uarray/LICENSE

Name: ampgo
Files: benchmarks/benchmarks/go_benchmark_functions/*.py
License: MIT
  Functions for testing global optimizers, forked from the AMPGO project,
  https://code.google.com/archive/p/ampgo

Name: pybind11
Files: no source files are included, however pybind11 binary artifacts are
  included with every binary build of SciPy.
License:
  Copyright (c) 2016 Wenzel Jakob <wenzel.jakob@epfl.ch>, All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice, this
     list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
     and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
  FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: HiGHS
Files: scipy/optimize/_highs/*
License: MIT
  For details, see scipy/optimize/_highs/LICENCE

Name: Boost
Files: scipy/_lib/boost/*
License: Boost Software License - Version 1.0
  For details, see scipy/_lib/boost/LICENSE_1_0.txt

Name: Biasedurn
Files: scipy/stats/biasedurn/*
License 3-Clause BSD
  For details, see scipy/stats/biasedurn/license.txt

Name: UNU.RAN
Files: scipy/_lib/unuran/*
License 3-Clause BSD
  For details, see scipy/_lib/unuran/license.txt

Name: NumPy
Files: scipy/stats/_rcont/[logfactorial.h,logfactorial.c]
License 3-Clause BSD
  For details, see header inside scipy/stats/_rcont/logfactorial.h
  and scipy/stats/_rcont/logfactorial.c


RECURSIVE LICENSE Mentioned in  LICENSES_bundled in different directories (list above)

Name: Decorator
Copyright (c) 2005-2015, Michele Simionato
All rights reserved.
Redistribution and use in source and binary forms, with or without
```

```
modification, are permitted provided that the following conditions are
met:
  Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
  Redistributions in bytecode form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

Name: ID
Copyright (c) 2014 by P.-G. Martinsson, V. Rokhlin,
Y. Shkolnisky, and M. Tygert.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions, and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions, and the following disclaimer in the
  documentation and/or other materials provided with the distribution.
- None of the names of the copyright holders may be used to endorse
  or promote products derived from this software without specific prior
  written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNERS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: L-BFGS-B
This is a Python wrapper (using F2PY) written by David M. Cooke
<cookedm@physics.mcmaster.ca> and released as version 0.9 on April 9, 2004.
The wrapper was slightly modified by Joonas Paalasmaa for the 3.0 version
in March 2012.
   ---
The version included here (in lbfgsb.f) is 3.0 (released April 25, 2011). It was
written by Ciyou Zhu, Richard Byrd, and Jorge Nocedal <nocedal@ece.nwu.edu>. It
carries the following condition for use:
  """
  This software is freely available, but we expect that all publications
  describing work using this software, or all commercial products using it,
  quote at least one of the references given below. This software is released
  under the BSD License.
  References
    * R. H. Byrd, P. Lu and J. Nocedal. A Limited Memory Algorithm for Bound
      Constrained Optimization, (1995), SIAM Journal on Scientific and
      Statistical Computing, 16, 5, pp. 1190-1208.
    * C. Zhu, R. H. Byrd and J. Nocedal. L-BFGS-B: Algorithm 778: L-BFGS-B,
```

```
      FORTRAN routines for large scale bound constrained optimization (1997),
      ACM Transactions on Mathematical Software, 23, 4, pp. 550 - 560.
    * J.L. Morales and J. Nocedal. L-BFGS-B: Remark on Algorithm 778: L-BFGS-B,
      FORTRAN routines for large scale bound constrained optimization (2011),
      ACM Transactions on Mathematical Software, 38, 1.
  """
The Python wrapper
This code uses F2PY (http://cens.ioc.ee/projects/f2py2e/) to generate
the wrapper around the Fortran code.
The Python code and wrapper are copyrighted 2004 by David M. Cooke
<cookedm@physics.mcmaster.ca>.
   ---
License for the Python wrapper
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
---

Name: SuperLU
Copyright (c) 2003, The Regents of the University of California, through
Lawrence Berkeley National Laboratory (subject to receipt of any required
approvals from U.S. Dept. of Energy)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
(3) Neither the name of Lawrence Berkeley National Laboratory, U.S. Dept. of
Energy nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: ARPACK
BSD Software License
Pertains to ARPACK and P_ARPACK
Copyright (c) 1996-2008 Rice University.
Developed by D.C. Sorensen, R.B. Lehoucq, C. Yang, and K. Maschhoff.
All rights reserved.
Arpack has been renamed to arpack-ng.
Copyright (c) 2001-2011 - Scilab Enterprises
```

```
Updated by Allan Cornet, Sylvestre Ledru.
Copyright (c) 2010 - Jordi Gutiérrez Hermoso (Octave patch)
Copyright (c) 2007 - Sébastien Fabbro (gentoo patch)
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: Qhull
                    Qhull, Copyright (c) 1993-2019
                            C.B. Barber
                           Arlington, MA
                               and
        The National Science and Technology Research Center for
        Computation and Visualization of Geometric Structures
                         (The Geometry Center)
                        University of Minnesota
                        email: qhull@qhull.org
This software includes Qhull from C.B. Barber and The Geometry Center.
Qhull is copyrighted as noted above.  Qhull is free software and may
be obtained via http from www.qhull.org.  It may be freely copied, modified,
and redistributed under the following conditions:
1. All copyright notices must remain intact in all files.
2. A copy of this text file must be distributed along with any copies
   of Qhull that you redistribute; this includes copies that you have
   modified, or copies of programs or other software products that
   include Qhull.
3. If you modify Qhull, you must include a notice giving the
   name of the person performing the modification, the date of
   modification, and the reason for such modification.
4. When distributing modified versions of Qhull, or other software
   products that include Qhull, you must provide notice that the original
   source code may be obtained as noted above.
5. There is no warranty or other guarantee of fitness for Qhull, it is
   provided solely "as is".  Bug reports or fixes may be sent to
   qhull_bug@qhull.org; the authors may or may not act on them as
   they desire.
---

Name: pypocketfft
Copyright (C) 2010-2019 Max-Planck-Society All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
```

```
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
       names of its contributors may be used to endorse or promote products
       derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: uarray
Files: scipy/_lib/uarray/*
License: 3-Clause BSD
  For details, see scipy/_lib/uarray/LICENSE
BSD 3-Clause License
Copyright (c) 2018, Quansight-Labs
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

Name: HiGHS
Copyright (c) 2021 ERGO-Code
    IPX and BASICLU, Copyright (c) 2018-2021  ERGO-Code
    Used in HiGHS under the MIT license.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
---

Name: Boost
Boost Software License - Version 1.0 - August 17th, 2003
```

```
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.
---

Name: Biasedurn
---------- Forwarded message ---------
From: Agner Fog <agner@agner.org>
Date: Wed, Jul 22, 2020 at 8:54 PM
Subject: Re: Add BiasedUrn to SciPy?
To: Matt Haberland <mhaberla@calpoly.edu>
Cc: Warren Weckesser <warren.weckesser@gmail.com>

Dear Matt The C++ code for these distributions without binding to the R project
are available here:
https://www.agner.org/random/stocc.zip
You have my permission to use it in SciPy under the new BSD license.
Best regards,
Agner Fog

On 22/07/2020 17.05, Matt Haberland wrote:
Hi Agner, I'm a maintainer of the Python scientific computing library SciPy,
and I'm working on improving the capabilities of our statistics subpackage
scipy.stats. We'd like to add both Fisher's and Wallenius' noncentral
hypergeometric distributions, but these look quite challenging to implement.
We found your BiasedUrn package, and we'd love to wrap it, but we can't
include GPL-3 licensed code under our BSD-new license. Would you consider
re-licensing BiasedUrn under a more permissive license, such as BSD-new or
MIT, so we can include it in SciPy?
Thank you for considering it!
Matt
--
Matt Haberland
Assistant Professor
BioResource and Agricultural Engineering
08A-3K, Cal Poly
---

Name: UNU.RAN
Permission was granted on 23 March 2021 by Josef Leydold
(josef.leydold@wu.ac.at) and Wolfgang Hoermann (hormannw@bound.edu.tr)
to use the UNU.RAN code excluding the uniform
random number generator in src/uniform/mrg31k3p.c (copyright by Renee Touzin)
under the BSD licence. The following files have been
removed from the original library:
    unuran-1.8.1/COPYING
    unuran-1.8.1/INSTALL
    unuran-1.8.1/Makefile.am
    unuran-1.8.1/Makefile.in
    unuran-1.8.1/NEWS
    unuran-1.8.1/UPGRADE
```

```
unuran-1.8.1/acinclude.m4
unuran-1.8.1/aclocal.m4
unuran-1.8.1/autoconf/config.guess
unuran-1.8.1/autoconf/config.sub
unuran-1.8.1/autoconf/depcomp
unuran-1.8.1/autoconf/install-sh
unuran-1.8.1/autoconf/ltmain.sh
unuran-1.8.1/autoconf/mdate-sh
unuran-1.8.1/autoconf/missing
unuran-1.8.1/autogen.sh
unuran-1.8.1/configure
unuran-1.8.1/doc/Makefile.am
unuran-1.8.1/doc/Makefile.in
unuran-1.8.1/doc/figures/Makefile.am
unuran-1.8.1/doc/figures/Makefile.in
unuran-1.8.1/doc/figures/discrete_inversion.eps
unuran-1.8.1/doc/figures/discrete_inversion.pdf
unuran-1.8.1/doc/figures/discrete_inversion.png
unuran-1.8.1/doc/figures/discrete_inversion.txt
unuran-1.8.1/doc/figures/inversion.eps
unuran-1.8.1/doc/figures/inversion.pdf
unuran-1.8.1/doc/figures/inversion.png
unuran-1.8.1/doc/figures/inversion.txt
unuran-1.8.1/doc/figures/rejection_from_constant_hat.eps
unuran-1.8.1/doc/figures/rejection_from_constant_hat.pdf
unuran-1.8.1/doc/figures/rejection_from_constant_hat.png
unuran-1.8.1/doc/figures/rejection_from_constant_hat.txt
unuran-1.8.1/doc/figures/rou-cauchy.eps
unuran-1.8.1/doc/figures/rou-cauchy.pdf
unuran-1.8.1/doc/figures/rou-cauchy.png
unuran-1.8.1/doc/figures/rou-cauchy.txt
unuran-1.8.1/doc/figures/texpict2img.pl
unuran-1.8.1/doc/src/Makefile.am
unuran-1.8.1/doc/src/Makefile.in
unuran-1.8.1/doc/src/README
unuran-1.8.1/doc/src/arvag.dh
unuran-1.8.1/doc/src/error_debug.dh
unuran-1.8.1/doc/src/examples.dh
unuran-1.8.1/doc/src/glossary.dh
unuran-1.8.1/doc/src/index.dh
unuran-1.8.1/doc/src/installation.dh
unuran-1.8.1/doc/src/intro.dh
unuran-1.8.1/doc/src/make_texi.pl
unuran-1.8.1/doc/src/methods.dh
unuran-1.8.1/doc/src/methods_cemp.texi
unuran-1.8.1/doc/src/methods_cont.texi
unuran-1.8.1/doc/src/methods_cvec.texi
unuran-1.8.1/doc/src/methods_cvemp.texi
unuran-1.8.1/doc/src/methods_discr.texi
unuran-1.8.1/doc/src/methods_matr.texi
unuran-1.8.1/doc/src/methods_mcmc.texi
unuran-1.8.1/doc/src/misc.dh
unuran-1.8.1/doc/src/ref_example0.texi
unuran-1.8.1/doc/src/ref_example0_str.texi
unuran-1.8.1/doc/src/ref_example1.texi
unuran-1.8.1/doc/src/ref_example1_str.texi
unuran-1.8.1/doc/src/ref_example2.texi
unuran-1.8.1/doc/src/ref_example2_str.texi
unuran-1.8.1/doc/src/ref_example3.texi
unuran-1.8.1/doc/src/ref_example3_str.texi
unuran-1.8.1/doc/src/ref_example_FuncStr.texi
unuran-1.8.1/doc/src/ref_example_anti.texi
unuran-1.8.1/doc/src/ref_example_anti_str.texi
unuran-1.8.1/doc/src/ref_example_cext.texi
unuran-1.8.1/doc/src/ref_example_cont.texi
unuran-1.8.1/doc/src/ref_example_cont_str.texi
unuran-1.8.1/doc/src/ref_example_dext.texi
```

```
    unuran-1.8.1/doc/src/ref_example_discr.texi
    unuran-1.8.1/doc/src/ref_example_discr_str.texi
    unuran-1.8.1/doc/src/ref_example_emp.texi
    unuran-1.8.1/doc/src/ref_example_emp_str.texi
    unuran-1.8.1/doc/src/ref_example_gsl.texi
    unuran-1.8.1/doc/src/ref_example_mixt.texi
    unuran-1.8.1/doc/src/ref_example_mixt_inv.texi
    unuran-1.8.1/doc/src/ref_example_rngstreams.texi
    unuran-1.8.1/doc/src/ref_example_vemp.texi
    unuran-1.8.1/doc/src/ref_example_win32_1.texi
    unuran-1.8.1/doc/src/ref_example_win32_2.texi
    unuran-1.8.1/doc/src/references.dh
    unuran-1.8.1/doc/src/stddist.dh
    unuran-1.8.1/doc/src/texinfo.tex
    unuran-1.8.1/doc/src/top.dh
    unuran-1.8.1/doc/src/unuran_src.texi
    unuran-1.8.1/doc/stamp-1
    unuran-1.8.1/doc/stamp-vti
    unuran-1.8.1/doc/unuran.html
    unuran-1.8.1/doc/unuran.info
    unuran-1.8.1/doc/unuran.pdf
    unuran-1.8.1/doc/unuran.texi
    unuran-1.8.1/doc/unuran.txt
    unuran-1.8.1/doc/unuran_win32.html
    unuran-1.8.1/doc/unuran_win32.info
    unuran-1.8.1/doc/unuran_win32.pdf
    unuran-1.8.1/doc/unuran_win32.texi
    unuran-1.8.1/doc/unuran_win32_libname.texi
    unuran-1.8.1/doc/version.texi
    unuran-1.8.1/doc/version_win32.texi
    unuran-1.8.1/examples/Makefile.am
    unuran-1.8.1/examples/Makefile.in
    unuran-1.8.1/examples/example0.c
    unuran-1.8.1/examples/example0_str.c
    unuran-1.8.1/examples/example1.c
    unuran-1.8.1/examples/example1_str.c
    unuran-1.8.1/examples/example2.c
    unuran-1.8.1/examples/example2_str.c
    unuran-1.8.1/examples/example3.c
    unuran-1.8.1/examples/example3_str.c
    unuran-1.8.1/examples/example_FuncStr.c
    unuran-1.8.1/examples/example_anti.c
    unuran-1.8.1/examples/example_anti_str.c
    unuran-1.8.1/examples/example_cext.c
    unuran-1.8.1/examples/example_cont.c
    unuran-1.8.1/examples/example_cont_str.c
    unuran-1.8.1/examples/example_cpp.cpp
    unuran-1.8.1/examples/example_dext.c
    unuran-1.8.1/examples/example_discr.c
    unuran-1.8.1/examples/example_discr_str.c
    unuran-1.8.1/examples/example_emp.c
    unuran-1.8.1/examples/example_emp_str.c
    unuran-1.8.1/examples/example_errorhandler.c
    unuran-1.8.1/examples/example_gsl.c
    unuran-1.8.1/examples/example_mcorr.c
    unuran-1.8.1/examples/example_mixt.c
    unuran-1.8.1/examples/example_mixt_inv.c
    unuran-1.8.1/examples/example_prng.c
    unuran-1.8.1/examples/example_prng_str.c
    unuran-1.8.1/examples/example_rngstreams.c
    unuran-1.8.1/examples/example_vemp.c
    unuran-1.8.1/experiments/Makefile.am
    unuran-1.8.1/experiments/Makefile.in
    unuran-1.8.1/experiments/make_timing_table.c
    unuran-1.8.1/experiments/timings_chap_10.conf
    unuran-1.8.1/experiments/timings_chap_8.conf
    unuran-1.8.1/scripts/Makefile.am
```

```
    unuran-1.8.1/scripts/Makefile.in
    unuran-1.8.1/scripts/compute_machine_constants.c
    unuran-1.8.1/scripts/make_urng_header.pl
    unuran-1.8.1/scripts/merge_h.pl
    unuran-1.8.1/scripts/read_PDF.pl
    unuran-1.8.1/scripts/remove_comments.pl
    unuran-1.8.1/scripts/run_valgrind.sh
    unuran-1.8.1/scripts/win32/Makefile.win32
    unuran-1.8.1/scripts/win32/build.sh
    unuran-1.8.1/scripts/win32/example1.c
    unuran-1.8.1/scripts/win32/example2.c
    unuran-1.8.1/scripts/win32/make_dll_def.pl
    unuran-1.8.1/src/Makefile.am
    unuran-1.8.1/src/Makefile.in
    unuran-1.8.1/src/README
    unuran-1.8.1/src/distr/Makefile.am
    unuran-1.8.1/src/distr/Makefile.in
    unuran-1.8.1/src/distributions/Makefile.am
    unuran-1.8.1/src/distributions/Makefile.in
    unuran-1.8.1/src/distributions/README
    unuran-1.8.1/src/methods/Makefile.am
    unuran-1.8.1/src/methods/Makefile.in
    unuran-1.8.1/src/parser/Makefile.am
    unuran-1.8.1/src/parser/Makefile.in
    unuran-1.8.1/src/parser/functparser_doc.dh
    unuran-1.8.1/src/parser/make_stringparser.pl
    unuran-1.8.1/src/parser/stringparser_doc.dh
    unuran-1.8.1/src/specfunct/Makefile.am
    unuran-1.8.1/src/specfunct/Makefile.in
    unuran-1.8.1/src/tests/Makefile.am
    unuran-1.8.1/src/tests/Makefile.in
    unuran-1.8.1/src/uniform/Makefile.am
    unuran-1.8.1/src/uniform/Makefile.in
    unuran-1.8.1/src/uniform/fish.c
    unuran-1.8.1/src/uniform/mrg31k3p.c
    unuran-1.8.1/src/uniform/mstd.c
    unuran-1.8.1/src/uniform/unuran_urng_gsl.h
    unuran-1.8.1/src/uniform/unuran_urng_prng.h
    unuran-1.8.1/src/uniform/unuran_urng_rngstreams.h
    unuran-1.8.1/src/uniform/urng_builtin.c
    unuran-1.8.1/src/uniform/urng_builtin.h
    unuran-1.8.1/src/uniform/urng_fvoid.c
    unuran-1.8.1/src/uniform/urng_fvoid.h
    unuran-1.8.1/src/uniform/urng_gsl.c
    unuran-1.8.1/src/uniform/urng_gsl.h
    unuran-1.8.1/src/uniform/urng_gslqrng.c
    unuran-1.8.1/src/uniform/urng_gslqrng.h
    unuran-1.8.1/src/uniform/urng_prng.c
    unuran-1.8.1/src/uniform/urng_prng.h
    unuran-1.8.1/src/uniform/urng_randomshift.c
    unuran-1.8.1/src/uniform/urng_randomshift.h
    unuran-1.8.1/src/uniform/urng_rngstreams.c
    unuran-1.8.1/src/uniform/urng_rngstreams.h
    unuran-1.8.1/src/unuran.h.in
    unuran-1.8.1/src/urng/Makefile.am
    unuran-1.8.1/src/urng/Makefile.in
    unuran-1.8.1/src/utils/Makefile.am
    unuran-1.8.1/src/utils/Makefile.in
    unuran-1.8.1/tests/Makefile.am
    unuran-1.8.1/tests/Makefile.in
    unuran-1.8.1/tests/README.conf
    unuran-1.8.1/tests/make_test_files.pl
    unuran-1.8.1/tests/t_arou.c
    unuran-1.8.1/tests/t_arou.conf
    unuran-1.8.1/tests/t_ars.c
    unuran-1.8.1/tests/t_ars.conf
    unuran-1.8.1/tests/t_auto.c
```

```
    unuran-1.8.1/tests/t_auto.conf
    unuran-1.8.1/tests/t_cext.c
    unuran-1.8.1/tests/t_cext.conf
    unuran-1.8.1/tests/t_cstd.c
    unuran-1.8.1/tests/t_cstd.conf
    unuran-1.8.1/tests/t_dari.c
    unuran-1.8.1/tests/t_dari.conf
    unuran-1.8.1/tests/t_dau.c
    unuran-1.8.1/tests/t_dau.conf
    unuran-1.8.1/tests/t_deprecated_tdrgw.c
    unuran-1.8.1/tests/t_deprecated_vmt.c
    unuran-1.8.1/tests/t_deprecated_vmt.conf
    unuran-1.8.1/tests/t_dext.c
    unuran-1.8.1/tests/t_dext.conf
    unuran-1.8.1/tests/t_dgt.c
    unuran-1.8.1/tests/t_dgt.conf
    unuran-1.8.1/tests/t_distr.c
    unuran-1.8.1/tests/t_distr.conf
    unuran-1.8.1/tests/t_distr_cemp.c
    unuran-1.8.1/tests/t_distr_cemp.conf
    unuran-1.8.1/tests/t_distr_condi.c
    unuran-1.8.1/tests/t_distr_condi.conf
    unuran-1.8.1/tests/t_distr_cont.c
    unuran-1.8.1/tests/t_distr_cont.conf
    unuran-1.8.1/tests/t_distr_corder.c
    unuran-1.8.1/tests/t_distr_corder.conf
    unuran-1.8.1/tests/t_distr_cvec.c
    unuran-1.8.1/tests/t_distr_cvec.conf
    unuran-1.8.1/tests/t_distr_cvemp.c
    unuran-1.8.1/tests/t_distr_cvemp.conf
    unuran-1.8.1/tests/t_distr_cxtrans.c
    unuran-1.8.1/tests/t_distr_cxtrans.conf
    unuran-1.8.1/tests/t_distr_discr.c
    unuran-1.8.1/tests/t_distr_discr.conf
    unuran-1.8.1/tests/t_distr_matr.c
    unuran-1.8.1/tests/t_distr_matr.conf
    unuran-1.8.1/tests/t_dsrou.c
    unuran-1.8.1/tests/t_dsrou.conf
    unuran-1.8.1/tests/t_dss.c
    unuran-1.8.1/tests/t_dss.conf
    unuran-1.8.1/tests/t_dstd.c
    unuran-1.8.1/tests/t_dstd.conf
    unuran-1.8.1/tests/t_empk.c
    unuran-1.8.1/tests/t_empk.conf
    unuran-1.8.1/tests/t_empl.c
    unuran-1.8.1/tests/t_empl.conf
    unuran-1.8.1/tests/t_gibbs.c
    unuran-1.8.1/tests/t_gibbs.conf
    unuran-1.8.1/tests/t_hinv.c
    unuran-1.8.1/tests/t_hinv.conf
    unuran-1.8.1/tests/t_hist.c
    unuran-1.8.1/tests/t_hist.conf
    unuran-1.8.1/tests/t_hitro.c
    unuran-1.8.1/tests/t_hrb.c
    unuran-1.8.1/tests/t_hrb.conf
    unuran-1.8.1/tests/t_hrd.c
    unuran-1.8.1/tests/t_hrd.conf
    unuran-1.8.1/tests/t_hri.c
    unuran-1.8.1/tests/t_hri.conf
    unuran-1.8.1/tests/t_info.c
    unuran-1.8.1/tests/t_info.conf
    unuran-1.8.1/tests/t_itdr.c
    unuran-1.8.1/tests/t_itdr.conf
    unuran-1.8.1/tests/t_mcorr.c
    unuran-1.8.1/tests/t_mcorr.conf
    unuran-1.8.1/tests/t_mixt.c
    unuran-1.8.1/tests/t_mvstd.c
```

```
unuran-1.8.1/tests/t_mvstd.conf
unuran-1.8.1/tests/t_mvtdr.c
unuran-1.8.1/tests/t_ninv.c
unuran-1.8.1/tests/t_ninv.conf
unuran-1.8.1/tests/t_norta.c
unuran-1.8.1/tests/t_norta.conf
unuran-1.8.1/tests/t_nrou.c
unuran-1.8.1/tests/t_nrou.conf
unuran-1.8.1/tests/t_pinv
unuran-1.8.1/tests/t_pinv.c
unuran-1.8.1/tests/t_srou.c
unuran-1.8.1/tests/t_srou.conf
unuran-1.8.1/tests/t_ssr.c
unuran-1.8.1/tests/t_ssr.conf
unuran-1.8.1/tests/t_stringparser.c
unuran-1.8.1/tests/t_stringparser.conf
unuran-1.8.1/tests/t_tabl.c
unuran-1.8.1/tests/t_tabl.conf
unuran-1.8.1/tests/t_tdr.c
unuran-1.8.1/tests/t_tdr.conf
unuran-1.8.1/tests/t_tdr_gw.c
unuran-1.8.1/tests/t_tdr_gw.conf
unuran-1.8.1/tests/t_tdr_ia.c
unuran-1.8.1/tests/t_tdr_ia.conf
unuran-1.8.1/tests/t_tdr_ps.c
unuran-1.8.1/tests/t_tdr_ps.conf
unuran-1.8.1/tests/t_unif.c
unuran-1.8.1/tests/t_unif.conf
unuran-1.8.1/tests/t_unur_error.c
unuran-1.8.1/tests/t_unur_error.conf
unuran-1.8.1/tests/t_unur_tests.c
unuran-1.8.1/tests/t_unur_tests.conf
unuran-1.8.1/tests/t_urng.c
unuran-1.8.1/tests/t_urng.conf
unuran-1.8.1/tests/t_utdr.c
unuran-1.8.1/tests/t_utdr.conf
unuran-1.8.1/tests/t_util_matrix.c
unuran-1.8.1/tests/t_util_matrix.conf
unuran-1.8.1/tests/t_vempk.c
unuran-1.8.1/tests/t_vempk.conf
unuran-1.8.1/tests/t_vnrou.c
unuran-1.8.1/tests/t_vnrou.conf
unuran-1.8.1/tests/t_x_gen.c
unuran-1.8.1/tests/t_x_gen.conf
unuran-1.8.1/tests/test_StdDistr.c
unuran-1.8.1/tests/test_StdDistr.m
unuran-1.8.1/tests/test_functionparser.c
unuran-1.8.1/tests/test_functionparser.m
unuran-1.8.1/tests/testcounter.c
unuran-1.8.1/tests/testdistributions/Makefile.am
unuran-1.8.1/tests/testdistributions/Makefile.in
unuran-1.8.1/tests/testdistributions/c_sawtooth_contpdf.c
unuran-1.8.1/tests/testdistributions/c_sawtooth_discpdf.c
unuran-1.8.1/tests/testdistributions/c_w_pdf_from_logpdf.c
unuran-1.8.1/tests/testdistributions/c_with_multiple_of_pdf.c
unuran-1.8.1/tests/testdistributions/c_wo_logpdf.c
unuran-1.8.1/tests/testdistributions/testdistributions.h
unuran-1.8.1/tests/testdistributions/vc_cauchy_RoU_ball.c
unuran-1.8.1/tests/testdistributions/vc_special_correlations_ar1.c
unuran-1.8.1/tests/testdistributions/vc_special_correlations_constantrho.c
unuran-1.8.1/tests/testdistributions/vc_w_marginals.c
unuran-1.8.1/tests/testdistributions/vc_wo_logpdf.c
unuran-1.8.1/tests/testroutines.c
unuran-1.8.1/tests/testunuran.h
unuran-1.8.1/src/distr/deprecated_distr.c
unuran-1.8.1/src/distr/deprecated_distr.h
unuran-1.8.1/src/methods/deprecated_methods.c
```

```
    unuran-1.8.1/src/methods/deprecated_methods.h
    unuran-1.8.1/src/methods/deprecated_tdrgw.h
    unuran-1.8.1/src/methods/deprecated_vmt.c
    unuran-1.8.1/src/methods/deprecated_vmt.h
    unuran-1.8.1/src/methods/deprecated_vmt_struct.h
    unuran-1.8.1/src/parser/stringparser_lists.ch.in
UNU.RAN relies on a modified version of the library Cephes, see ./src/src/specfunct/cephes_source.h

Details from /src/src/specfunct/cephes_source.h

   This file was considerably changed for UNU.RAN.
   As a consequence it has been renamed from "mconf.h" to
   "cephes_source.h" to avoid confusion.

   We were only interested in the files:
      gamma.c
      igamma.c
      incbet.c
      ndtr.c
      ndtri.c
   to use these files we needed the auxiliary files:
      isnan.c
      mtherr.c
      polevl.c
   The aim was to enhance portability for ANSI C without expert
   knowledge of the floating point unit.
   The main changes are
      numeric constants (in cephes - const.c) are replaced
      by macros defined in this file (source_mconf.h).
      We changed these constants using the constants provided by
      ANSI C in the math.h file.
      We changed also the definitions of MAXGAM (in incbet.c) and of
      MAXSTIR (in gamma.c).
      Everything concerning NANS and INFINITY was moved into isnan.c.
      (Also the defines to turn it off or on.)
      We have only tested this version with NAN and INFINITY turned
      off, but we have not changed anything concerning that
      question. So turning this support on should (could) work.
   March 26th, 2001, Josef Leydold and Wolfgang Hoermann.

/*----------------------------------------------------------------------------*/

/*              mconf.h
 *
 *  Common include file for math routines
 *
 *
 *
 * SYNOPSIS:
 *
 * #include "mconf.h"
 *
 *
 *
 * DESCRIPTION:
 *
 * This file contains definitions for error codes that are
 * passed to the common error handling routine mtherr()
 * (which see).
 *
 * The file also includes a conditional assembly definition
 * for the type of computer arithmetic (IEEE, DEC, Motorola
 * IEEE, or UNKnown).
 *
 * For Digital Equipment PDP-11 and VAX computers, certain
 * IBM systems, and others that use numbers with a 56-bit
 * significand, the symbol DEC should be defined.  In this
```

```
 * mode, most floating point constants are given as arrays
 * of octal integers to eliminate decimal to binary conversion
 * errors that might be introduced by the compiler.
 *
 * For little-endian computers, such as IBM PC, that follow the
 * IEEE Standard for Binary Floating Point Arithmetic (ANSI/IEEE
 * Std 754-1985), the symbol IBMPC should be defined.  These
 * numbers have 53-bit significands.  In this mode, constants
 * are provided as arrays of hexadecimal 16 bit integers.
 *
 * Big-endian IEEE format is denoted MIEEE.  On some RISC
 * systems such as Sun SPARC, double precision constants
 * must be stored on 8-byte address boundaries.  Since integer
 * arrays may be aligned differently, the MIEEE configuration
 * may fail on such machines.
 *
 * To accommodate other types of computer arithmetic, all
 * constants are also provided in a normal decimal radix
 * which one can hope are correctly converted to a suitable
 * format by the available C language compiler.  To invoke
 * this mode, define the symbol UNK.
 *
 * An important difference among these modes is a predefined
 * set of machine arithmetic constants for each.  The numbers
 * MACHEP (the machine roundoff error), MAXNUM (largest number
 * represented), and several other parameters are preset by
 * the configuration symbol.  Check the file const.c to
 * ensure that these values are correct for your computer.
 *
 * Configurations NANS, INFINITIES, MINUSZERO, and DENORMAL
 * may fail on many systems.  Verify that they are supposed
--------- * to work on your computer.
 */

Cephes Math Library Release 2.3:  June, 1995
Copyright 1984, 1987, 1989, 1995 by Stephen L. Moshier
-------------------------------------------------------

Numpydoc License
Copyright (C) 2008-2023 Stefan van der Walt <stefan@mentat.za.net>, Pauli Virtanen <pav@iki.fi>
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
 1. Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
 2. Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in
    the documentation and/or other materials provided with the
    distribution.
THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING
IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.
---

scipy-sphinx-theme Licence
The following copyright statement applies to all files, excluding
exceptions mentioned explicitly below:
Copyright (c) 2011  Kevin Dunn, Surya K, Pauli Virtanen, the Sphinx team
All rights reserved.
```

```
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
      copyright notice, this list of conditions and the following
      disclaimer in the documentation and/or other materials provided
      with the distribution.
    * Neither the name of the author nor the names of other
      contributors may be used to endorse or promote products derived
      from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Exceptions:
_theme/scipy/static/copybutton.js
    Originates from Python; Doc/tools/sphinxext/static/copybutton.js
    1. This LICENSE AGREEMENT is between the Python Software Foundation
    ("PSF"), and the Individual or Organization ("Licensee") accessing and
    otherwise using this software ("Python") in source or binary form and
    its associated documentation.
    2. Subject to the terms and conditions of this License Agreement, PSF hereby
    grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce,
    analyze, test, perform and/or display publicly, prepare derivative works,
    distribute, and otherwise use Python alone or in any derivative version,
    provided, however, that PSF's License Agreement and PSF's notice of copyright,
    i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010,
    2011, 2012, 2013 Python Software Foundation; All Rights Reserved" are retained
    in Python alone or in any derivative version prepared by Licensee.
    3. In the event Licensee prepares a derivative work that is based on
    or incorporates Python or any part thereof, and wants to make
    the derivative work available to others as provided herein, then
    Licensee hereby agrees to include in any such work a brief summary of
    the changes made to Python.
    4. PSF is making Python available to Licensee on an "AS IS"
    basis.  PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
    IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND
    DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
    FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT
    INFRINGE ANY THIRD PARTY RIGHTS.
    5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON
    FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS
    A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON,
    OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
    6. This License Agreement will automatically terminate upon a material
    breach of its terms and conditions.
    7. Nothing in this License Agreement shall be deemed to create any
    relationship of agency, partnership, or joint venture between PSF and
    Licensee.  This License Agreement does not grant permission to use PSF
    trademarks or trade name in a trademark sense to endorse or promote
    products or services of Licensee, or any third party.
    8. By copying, installing or otherwise using Python, Licensee
    agrees to be bound by the terms and conditions of this License
    Agreement.
_theme/scipy/static/less/bootstrap/*,
_theme/scipy/static/img/glyphicons-*,
_theme/scipy/static/css/spc-bootstrap.css
```

```
    Twitter Bootstrap v2.3.1 (and generated output CSS files)
    Copyright 2012 Twitter, Inc
    Licensed under the Apache License v2.0
    http://www.apache.org/licenses/LICENSE-2.0
```

==========
==========

xgboost

```
xgboost:
Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section


4th party Dependencies
----------------------

numpy:
-----
Copyright (c) 2005-2024, NumPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
    * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.
    * Neither the name of the NumPy Developers nor the names of any
       contributors may be used to endorse or promote products derived
       from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This binary distribution of NumPy also bundles the following software:

Name: OpenBLAS
Files: extra-dll\libopenb*.dll
Description: bundled as a dynamically linked library
Availability: https://github.com/xianyi/OpenBLAS/
License: 3-clause BSD
  Copyright (c) 2011-2014, The OpenBLAS Project
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
     1. Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
     2. Redistributions in binary form must reproduce the above copyright
```

```
        notice, this list of conditions and the following disclaimer in
        the documentation and/or other materials provided with the
        distribution.
     3. Neither the name of the OpenBLAS project nor the names of
        its contributors may be used to endorse or promote products
        derived from this software without specific prior written
        permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
  USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: LAPACK
Files: extra-dll\libopenb*.dll
Description: bundled in OpenBLAS
Availability: https://github.com/xianyi/OpenBLAS/
License 3-clause BSD
  Copyright (c) 1992-2013 The University of Tennessee and The University
                          of Tennessee Research Foundation.  All rights
                          reserved.
  Copyright (c) 2000-2013 The University of California Berkeley. All
                          rights reserved.
  Copyright (c) 2006-2013 The University of Colorado Denver.  All rights
                          reserved.
  $COPYRIGHT$
  Additional copyrights may follow
  $HEADER$
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are
  met:
  - Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
  - Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer listed
    in this license in the documentation and/or other materials
    provided with the distribution.
  - Neither the name of the copyright holders nor the names of its
    contributors may be used to endorse or promote products derived from
    this software without specific prior written permission.
  The copyright holders provide no reassurances that the source code
  provided does not infringe any patent, copyright, or any other
  intellectual property rights of third parties.  The copyright holders
  disclaim any liability to any recipient for claims brought against
  recipient by any third party for infringement of that parties
  intellectual property rights.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSES_bundled.txt
--------------------
The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.
```

```
Name: lapack-lite
Files: numpy/linalg/lapack_lite/*
License: BSD-3-Clause
  For details, see numpy/linalg/lapack_lite/LICENSE.txt

Name: dragon4
Files: numpy/core/src/multiarray/dragon4.c
License: MIT
  For license text, see numpy/core/src/multiarray/dragon4.c

Name: libdivide
Files: numpy/core/include/numpy/libdivide/*
License: Zlib
  For license text, see numpy/core/include/numpy/libdivide/LICENSE.txt

RECURSIVE LICENSE Mentioned in  LICENSES_bundled.txt

lapack-lite
Copyright (c) 1992-2022 The University of Tennessee and The University
                        of Tennessee Research Foundation.  All rights
                        reserved.
Copyright (c) 2000-2022 The University of California Berkeley. All
                        rights reserved.
Copyright (c) 2006-2022 The University of Colorado Denver.  All rights
                        reserved.
Additional copyrights may follow
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
The copyright holders provide no reassurances that the source code
provided does not infringe any patent, copyright, or any other
intellectual property rights of third parties.  The copyright holders
disclaim any liability to any recipient for claims brought against
recipient by any third party for infringement of that parties
intellectual property rights.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

dragon4
  Copyright (c) 2022 Ryan Juckett
  Permission is hereby granted, free of charge, to any person obtaining a copy
  of this software and associated documentation files (the "Software"), to
  deal in the Software without restriction, including without limitation the
  rights to use, copy, modify, merge, publish, distribute, sublicense, andor
  sell copies of the Software, and to permit persons to whom the Software is
  furnished to do so, subject to the following conditions:
  The above copyright notice and this permission notice shall be included in
  all copies or substantial portions of the Software.
```

```
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
  IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
  FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
  AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
  LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
  FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
  IN THE SOFTWARE.


libdivide
zlib License
  Copyright (C) 2010 - 2022 ridiculous_fish, <libdivide@ridiculousfish.com>
  Copyright (C) 2016 - 2022 Kim Walisch, <kim.walisch@gmail.com>
  This software is provided 'as-is', without any express or implied
  warranty.  In no event will the authors be held liable for any damages
  arising from the use of this software.
  Permission is granted to anyone to use this software for any purpose,
  including commercial applications, and to alter it and redistribute it
  freely, subject to the following restrictions:
  1. The origin of this software must not be misrepresented; you must not
     claim that you wrote the original software. If you use this software
     in a product, an acknowledgment in the product documentation would be
     appreciated but is not required.
  2. Altered source versions must be plainly marked as such, and must not be
     misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.
---

LICENSES_bundled in different directories:

The NumPy repository and source distributions bundle several libraries that are
compatibly licensed.  We list these here.

Name: SPLITMIX64
Files: /numpy/blob/numpy/random/src/splitmix64/*
License: Sebastiano Vigna © 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
For details, see /numpy/blob/numpy/random/src/splitmix64/LICENSE.md

Name: SFC64
Files: /numpy/blob/numpy/random/src/sfc64/*
License: MIT
For details, see /numpy/blob/numpy/random/src/sfc64/LICENSE.md

Name: PHILOX
Files: /numpy/blob/numpy/random/src/philox/*
License: D. E. Shaw Research
For license text, see /numpy/blob/numpy/random/src/philox/LICENSE.md

Name: PCG64
Files: /numpy/blob/numpy/random/src/pcg64/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/pcg64/LICENSE.md

Name: MT19937
Files: /numpy/blob/numpy/random/src/mt19937/*
License: MIT
For license text, see/numpy/blob/numpy/random/src/mt19937/LICENSE.md

Name: Julia
Files: /numpy/blob/numpy/random/src/distributions/*
License: Jeff Bezanson, Stefan Karpinski, Viral B. Shah, and other contributors
For license text, see/numpy/blob/numpy/random/src/distributions/LICENSE.md

Name: Random
Files: /numpy/blob/numpy/random/*
License: dual-licensed under the The University of Illinois/NCSA
Open Source License (NCSA) and The 3-Clause BSD License
```

```
For license text, see/numpy/blob/numpy/random/LICENSE.md

Name: numpy.core.ma
Files: /numpy/blob/numpy/ma/*
License: University of Georgia and Pierre G.F. Gerard-Marchant
For license text, see /numpy/blob/numpy/ma/LICENSE


RECURSIVE LICENSE Mentioned in  LICENSES_bundled in different directories (list above)

Name: SPLITMIX64
Written in 2015 by Sebastiano Vigna (vigna@acm.org)
To the extent possible under law, the author has dedicated all
copyright and related and neighboring rights to this software to the
public domain worldwide. This software is distributed without any warranty.
See http://creativecommons.org/publicdomain/zero/1.0/.

Name: SFC64
© 2005–2019 NumPy Developers, Licensed under the 3-clause BSD License.
The MIT License
Adapted from a C++ implementation of Chris Doty-Humphrey's SFC PRNG.
https://gist.github.com/imneme/f1f7821f07cf76504a97f6537c818083
Copyright (c) 2018 Melissa E. O'Neill
Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.


Name: PHILOX
Copyright 2010-2012, D. E. Shaw Research. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
   - Redistributions of source code must retain the above copyright
   notice, this list of conditions, and the following disclaimer.
   -  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions, and the following disclaimer in
   the documentation and/or other materials provided with the distribution.
    - Neither the name of D. E. Shaw Research nor the names of its
    contributors may be used to endorse or promote products derived
    from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

Name: PCG64
```

```
The MIT License
PCG Random Number Generation for C.
Copyright 2014 Melissa O'Neill oneill@pcg-random.org
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: MT19937
Copyright (c) 2003-2005, Jean-Sebastien Roy (js@jeannot.org)
The rk_random and rk_seed functions algorithms and the
original design of the Mersenne Twister RNG:
Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji
Nishimura, All rights reserved.
Redistribution and use in source and binary forms,
with or without modification, are permitted provided that the
following conditions are met:
   -  Redistributions of source code must retain the above
   copyright notice, this list of conditions and the following disclaimer.
   -  Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials
   provided with the distribution.
    - The names of its contributors may not be used to endorse
    or promote products derived from this software without
    specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING,
BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY
AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT
SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
OF THE POSSIBILITY OF SUCH DAMAGE.
Original algorithm for the implementation of rk_interval function
from Richard J. Wagner's implementation of the Mersenne Twister RNG,
optimised by Magnus Jonsson.
Constants used in the rk_double implementation by Isaku Wada.
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction,
including without limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of the Software,
and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
```

```
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Julia
The ziggurat methods were derived from Julia.
Copyright (c) 2009-2019: Jeff Bezanson, Stefan Karpinski,
Viral B. Shah, and other contributors:
https://github.com/JuliaLang/julia/contributors
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without restriction
, including without limitation the rights to use, copy, modify,
merge, publish, distribute, sublicense, and/or sell copies of the
Software, and to permit persons to whom the Software is furnished
to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: Random
NCSA Open Source License
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Developed by: Kevin Sheppard (kevin.sheppard@economics.ox.ac.uk,
kevin.k.sheppard@gmail.com) http://www.kevinsheppard.com
Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal with the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom
the Software is furnished to do so, subject to the following
conditions:
Redistributions of source code must retain the above
copyright notice, this list of conditions and the following
disclaimers.
Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimers in the documentation and/or other materials
provided with the distribution.
Neither the names of Kevin Sheppard, nor the names of any
contributors may be used to endorse or promote products
derived from this Software without specific prior written
permission.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO
THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH
THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.
Copyright (c) 2019 Kevin Sheppard. All rights reserved.
Redistribution and use in source and binary forms, with
or without modification, are permitted provided that the
following conditions are met:
    - Redistributions of source code must retain the above
    copyright notice, this list of conditions and the following
    disclaimer.
    - Redistributions in binary form must reproduce the
```

```
    above copyright notice, this list of conditions and
    the following disclaimer in the documentation and/or
    other materials provided with the distribution.
   - Neither the name of the copyright holder nor the names
   of its contributors may be used to endorse or promote products
   derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Components
Many parts of this module have been derived from original sources,
often the algorithm's designer. Component licenses are located with the component code.


Name: numpy.core.ma
Copyright (c) 2006, University of Georgia and Pierre G.F. Gerard-Marchant
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
     * Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
     * Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
     * Neither the name of the University of Georgia nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
 THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY
 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---

scipy:
Copyright (c) 2001-2002 Enthought, Inc. 2003-2024, SciPy Developers.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
3. Neither the name of the copyright holder nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
```

```
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The SciPy repository and source distributions bundle a number of libraries that
are compatibly licensed.  We list these here.

Name: Decorator
Files: scipy/_lib/decorator.py
License: 2-clause BSD
Copyright (c) 2005-2015, Michele Simionato
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
  Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
  Redistributions in bytecode form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

Name: fast_matrix_market
Files: scipy/io/_fast_matrix_market/*
License: 2-clause BSD
Copyright (C) 2020-2023 Adam Lugowski
Redistribution and use in source and binary forms, with or
without modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY
OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF
THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: pystreambuf
Files: scipy/io/_fast_matrix_market/src/pystreambuf.h
License: 3-clause BSD
Copyright (c) 2006, The Regents of the University of
California, through Lawrence Berkeley National Laboratory (subject to
receipt of any required approvals from the U.S. Dept. of Energy).  All
rights reserved.
```

```
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
(3) Neither the name of the University of California, Lawrence Berkeley
National Laboratory, U.S. Dept. of Energy nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER
OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
You are under no obligation whatsoever to provide any bug fixes,
patches, or upgrades to the features, functionality or performance of
the source code ("Enhancements") to anyone; however, if you choose to
make your Enhancements available either publicly, or directly to
Lawrence Berkeley National Laboratory, without imposing a separate
written license agreement for such Enhancements, then you hereby grant
the following license: a  non-exclusive, royalty-free perpetual license
to install, use, modify, prepare derivative works, incorporate into
other computer software, distribute, and sublicense such enhancements or
derivative works thereof, in binary and source code form.

Name: fast_float
Files: scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/fast_float/*
License: MIT
  For details, see
scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/fast_float/LICENSE-MITMIT License
Copyright (c) 2021 The fast_float authors
Permission is hereby granted, free of charge, to any
person obtaining a copy of this software and associated
documentation files (the "Software"), to deal in the
Software without restriction, including without
limitation the rights to use, copy, modify, merge,
publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software
is furnished to do so, subject to the following
conditions:
The above copyright notice and this permission notice
shall be included in all copies or substantial portions
of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED
TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT
SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR
IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ryu
Files: scipy/io/_fast_matrix_market/fast_matrix_market/dependencies/ryu/*
License: BSL-1.0
Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
```

```
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: ID
Files: scipy/linalg/src/id_dist/*
License: 3-clause BSD
  For details, see scipy/linalg/src/id_dist/doc/doc.tex
Copyright 2014 by P.-G. Martinsson, V. Rokhlin,
Y. Shkolnisky, and M. Tygert.
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
Redistributions of source code must retain the above copyright
notice, this list of conditions, and the following disclaimer.
Redistributions in binary form must reproduce the above copyright
notice, this list of conditions, and the following disclaimer in the
documentation and/or other materials provided with the distribution.
None of the names of the copyright holders may be used to endorse
or promote products derived from this software without specific prior
written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNERS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: L-BFGS-B
Files: scipy/optimize/lbfgsb/*
License: BSD license
  For details, see scipy/optimize/lbfgsb/README
Copyright (c) 2004 David M. Cooke <cookedm@physics.mcmaster.ca>
Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
```

```
SOFTWARE.

Name: LAPJVsp
Files: scipy/sparse/csgraph/_matching.pyx
License: 3-clause BSD
Copyright 1987-, A. Volgenant/Amsterdam School of Economics,
                 University of Amsterdam
  Distributed under 3-clause BSD license with permission from
  University of Amsterdam.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice,
     this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
    and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
    without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
  AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
  ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
  LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
  CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
  ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
  POSSIBILITY OF SUCH DAMAGE.

Name: SuperLU
Files: scipy/sparse/linalg/dsolve/SuperLU/*
License: 3-clause BSD
  For details, see scipy/sparse/linalg/dsolve/SuperLU/License.txt
Copyright (c) 2003, The Regents of the University of California, through
Lawrence Berkeley National Laboratory (subject to receipt of any required
approvals from U.S. Dept. of Energy)
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
(1) Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
(2) Redistributions in binary form must reproduce the above copyright notice,
this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution.
(3) Neither the name of Lawrence Berkeley National Laboratory, U.S. Dept. of
Energy nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ARPACK
Files: scipy/sparse/linalg/eigen/arpack/ARPACK/*
License: 3-clause BSD
  For details, see scipy/sparse/linalg/eigen/arpack/ARPACK/COPYING
BSD Software License
Pertains to ARPACK and P_ARPACK
```

```
Copyright (c) 1996-2008 Rice University.
Developed by D.C. Sorensen, R.B. Lehoucq, C. Yang, and K. Maschhoff.
All rights reserved.
Arpack has been renamed to arpack-ng.
Copyright (c) 2001-2011 - Scilab Enterprises
Updated by Allan Cornet, Sylvestre Ledru.
Copyright (c) 2010 - Jordi Gutiérrez Hermoso (Octave patch)
Copyright (c) 2007 - Sébastien Fabbro (gentoo patch)
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer listed
  in this license in the documentation and/or other materials
  provided with the distribution.
- Neither the name of the copyright holders nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Qhull
Files: scipy/spatial/qhull/*
License: Qhull license (BSD-like)
  For details, see scipy/spatial/qhull/COPYING.txt
                    Qhull, Copyright (c) 1993-2019
                             C.B. Barber
                            Arlington, MA
                                and
       The National Science and Technology Research Center for
        Computation and Visualization of Geometric Structures
                         (The Geometry Center)
                        University of Minnesota
                        email: qhull@qhull.org
This software includes Qhull from C.B. Barber and The Geometry Center.
Qhull is copyrighted as noted above.  Qhull is free software and may
be obtained via http from www.qhull.org.  It may be freely copied, modified,
and redistributed under the following conditions:
1. All copyright notices must remain intact in all files.
2. A copy of this text file must be distributed along with any copies
   of Qhull that you redistribute; this includes copies that you have
   modified, or copies of programs or other software products that
   include Qhull.
3. If you modify Qhull, you must include a notice giving the
   name of the person performing the modification, the date of
   modification, and the reason for such modification.
4. When distributing modified versions of Qhull, or other software
   products that include Qhull, you must provide notice that the original
   source code may be obtained as noted above.
5. There is no warranty or other guarantee of fitness for Qhull, it is
   provided solely "as is".  Bug reports or fixes may be sent to
   qhull_bug@qhull.org; the authors may or may not act on them as
   they desire.

Name: Cephes
Files: scipy/special/cephes/*
```

```
License: 3-clause BSD
  Distributed under 3-clause BSD license with permission from the author,
  see https://lists.debian.org/debian-legal/2004/12/msg00295.html
  Cephes Math Library Release 2.8:  June, 2000
  Copyright 1984, 1995, 2000 by Stephen L. Moshier
  This software is derived from the Cephes Math Library and is
  incorporated herein by permission of the author.
  All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
      * Redistributions of source code must retain the above copyright
        notice, this list of conditions and the following disclaimer.
      * Redistributions in binary form must reproduce the above copyright
        notice, this list of conditions and the following disclaimer in the
        documentation and/or other materials provided with the distribution.
      * Neither the name of the <organization> nor the
        names of its contributors may be used to endorse or promote products
        derived from this software without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
  DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
  (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
  LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
  ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
  SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: Faddeeva
Files: scipy/special/Faddeeva.*
License: MIT
  Copyright (c) 2012 Massachusetts Institute of Technology
  Permission is hereby granted, free of charge, to any person obtaining
  a copy of this software and associated documentation files (the
  "Software"), to deal in the Software without restriction, including
  without limitation the rights to use, copy, modify, merge, publish,
  distribute, sublicense, and/or sell copies of the Software, and to
  permit persons to whom the Software is furnished to do so, subject to
  the following conditions:
  The above copyright notice and this permission notice shall be
  included in all copies or substantial portions of the Software.
  THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
  EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
  MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
  NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
  LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
  OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
  WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: qd
Files: scipy/special/cephes/dd_*.[ch]
License: modified BSD license ("BSD-LBNL-License.doc")
  This work was supported by the Director, Office of Science, Division
  of Mathematical, Information, and Computational Sciences of the
  U.S. Department of Energy under contract numbers DE-AC03-76SF00098 and
  DE-AC02-05CH11231.
  Copyright (c) 2003-2009, The Regents of the University of California,
  through Lawrence Berkeley National Laboratory (subject to receipt of
  any required approvals from U.S. Dept. of Energy) All rights reserved.
  1. Redistribution and use in source and binary forms, with or
  without modification, are permitted provided that the following
  conditions are met:
  (1) Redistributions of source code must retain the copyright
  notice, this list of conditions and the following disclaimer.
  (2) Redistributions in binary form must reproduce the copyright
  notice, this list of conditions and the following disclaimer in
```

```
  the documentation and/or other materials provided with the
  distribution.
  (3) Neither the name of the University of California, Lawrence
  Berkeley National Laboratory, U.S. Dept. of Energy nor the names
  of its contributors may be used to endorse or promote products
  derived from this software without specific prior written
  permission.
  2. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
  A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
  OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
  SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
  LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
  DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
  THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
  (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
  3. You are under no obligation whatsoever to provide any bug fixes,
  patches, or upgrades to the features, functionality or performance of
  the source code ("Enhancements") to anyone; however, if you choose to
  make your Enhancements available either publicly, or directly to
  Lawrence Berkeley National Laboratory, without imposing a separate
  written license agreement for such Enhancements, then you hereby grant
  the following license: a non-exclusive, royalty-free perpetual license
  to install, use, modify, prepare derivative works, incorporate into
  other computer software, distribute, and sublicense such enhancements
  or derivative works thereof, in binary and source code form.

Name: pypocketfft
Files: scipy/fft/_pocketfft/[pocketfft.h, pypocketfft.cxx]
License: 3-Clause BSD
  For details, see scipy/fft/_pocketfft/LICENSE.md
Copyright (C) 2010-2019 Max-Planck-Society
All rights reserved.
Redistribution and use in source and binary forms, with or without modification,
are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above copyright notice, this
  list of conditions and the following disclaimer in the documentation and/or
  other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its contributors may
  be used to endorse or promote products derived from this software without
  specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: uarray
Files: scipy/_lib/uarray/*
License: 3-Clause BSD
  For details, see scipy/_lib/uarray/LICENSE
BSD 3-Clause License
Copyright (c) 2018, Quansight-Labs
All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
* Redistributions of source code must retain the above copyright notice, this
  list of conditions and the following disclaimer.
```

```
* Redistributions in binary form must reproduce the above copyright notice,
  this list of conditions and the following disclaimer in the documentation
  and/or other materials provided with the distribution.
* Neither the name of the copyright holder nor the names of its
  contributors may be used to endorse or promote products derived from
  this software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: ampgo
Files: benchmarks/benchmarks/go_benchmark_functions/*.py
License: MIT
  Functions for testing global optimizers, forked from the AMPGO project,
  https://code.google.com/archive/p/ampgo

Name: pybind11
Files: no source files are included, however pybind11 binary artifacts are
  included with every binary build of SciPy.
License:
  Copyright (c) 2016 Wenzel Jakob <wenzel.jakob@epfl.ch>, All rights reserved.
  Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice, this
     list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice,
     this list of conditions and the following disclaimer in the documentation
     and/or other materials provided with the distribution.
  3. Neither the name of the copyright holder nor the names of its contributors
     may be used to endorse or promote products derived from this software
     without specific prior written permission.
  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
  WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
  DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE
  FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
  CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
  OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Name: HiGHS
Files: scipy/optimize/_highs/*
License: MIT
  For details, see scipy/optimize/_highs/LICENCE
MIT License
Copyright (c) 2023 HiGHS
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
```

```
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: Boost
Files: scipy/_lib/boost_math/*
License: Boost Software License - Version 1.0
  For details, see scipy/_lib/boost_math/LICENSE.txt
Boost Software License - Version 1.0 - August 17th, 2003
Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.

Name: Biasedurn
Files: scipy/stats/biasedurn/*
License 3-Clause BSD
  For details, see scipy/stats/biasedurn/license.txt

---------- Forwarded message ---------
From: Agner Fog <agner@agner.org>
Date: Wed, Jul 22, 2020 at 8:54 PM
Subject: Re: Add BiasedUrn to SciPy?
To: Matt Haberland <mhaberla@calpoly.edu>
Cc: Warren Weckesser <warren.weckesser@gmail.com>
Dear Matt The C++ code for these distributions without binding to the R project
are available here:
https://www.agner.org/random/stocc.zip
You have my permission to use it in SciPy under the new BSD license.
Best regards,
Agner Fog

On 22/07/2020 17.05, Matt Haberland wrote:
Hi Agner, I'm a maintainer of the Python scientific computing library SciPy,
and I'm working on improving the capabilities of our statistics subpackage
scipy.stats. We'd like to add both Fisher's and Wallenius' noncentral
hypergeometric distributions, but these look quite challenging to implement.
We found your BiasedUrn package, and we'd love to wrap it, but we can't
include GPL-3 licensed code under our BSD-new license. Would you consider
re-licensing BiasedUrn under a more permissive license, such as BSD-new or
MIT, so we can include it in SciPy?
Thank you for considering it!
Matt
--
Matt Haberland
Assistant Professor
BioResource and Agricultural Engineering
08A-3K, Cal Poly

Name: UNU.RAN
Files: scipy/_lib/unuran/*
License 3-Clause BSD
```

```
  For details, see scipy/_lib/unuran/license.txt
Permission was granted on 23 March 2021 by Josef Leydold
(josef.leydold@wu.ac.at) and Wolfgang Hoermann (hormannw@bound.edu.tr)
to use the UNU.RAN code excluding the uniform random number
generator in src/uniform/mrg31k3p.c (copyright by Renee Touzin)
under the BSD licence

Name: array-api-compat
Files: scipy/_lib/array-api-compat/*
License: MIT
  For details, see scipy/_lib/array-api-compat/LICENCE
MIT License
Copyright (c) 2022 Consortium for Python Data API Standards
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.

Name: Tempita
Files: scipy/_build_utils/tempita/*
License: MIT
  For details, see scipy/_build_utils/tempita/LICENCE.txt
Copyright (c) 2008 Ian Bicking and Contributors
Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:
The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Name: NumPy
Files: scipy/stats/_rcont/[logfactorial.h,logfactorial.c]
License 3-Clause BSD
  For details, see header inside scipy/stats/_rcont/logfactorial.h
  and scipy/stats/_rcont/logfactorial.c
```

```
================================================================================
================================================================================
```

|| Additional third-party components

The following section contain licensing information for libraries that may be included in using the MySQL AI functionality:

```
OIT 3rd party components
========================

Expat XML Parser
----------------
Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper
Copyright (c) 2001-2024 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:The above copyright notice and this permission
notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
================================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
================================================================================

Freetype
--------
Copyright 1996-2002, 2006 by David Turner, Robert Wilhelm, and Werner Lemberg

Introduction
============
The FreeType  Project is distributed in  several archive packages;
some of them may contain, in addition to the FreeType font engine,
various tools and  contributions which rely on, or  relate to, the
FreeType Project.

This  license applies  to all  files found  in such  packages, and
which do not  fall under their own explicit  license.  The license
affects  thus  the  FreeType   font  engine,  the  test  programs,
documentation and makefiles, at the very least.

This  license   was  inspired  by  the  BSD,   Artistic,  and  IJG
(Independent JPEG  Group) licenses, which  all encourage inclusion
and  use of  free  software in  commercial  and freeware  products
alike.  As a consequence, its main points are that:

    o We don't promise that this software works. However, we will be
      interested in any kind of bug reports. (`as is' distribution)

    o You can  use this software for whatever you  want, in parts or
      full form, without having to pay us. (`royalty-free' usage)

    o You may not pretend that  you wrote this software.  If you use
      it, or  only parts of it,  in a program,  you must acknowledge
      somewhere  in  your  documentation  that  you  have  used  the
      FreeType code. (`credits')

We  specifically  permit  and  encourage  the  inclusion  of  this
software, with  or without modifications,  in commercial products.
We  disclaim  all warranties  covering  The  FreeType Project  and
assume no liability related to The FreeType Project.

Finally,  many  people  asked  us  for  a  preferred  form  for  a
credit/disclaimer to use in compliance with this license.  We thus
```

```
encourage you to use the following text:

"""
Portions of this software are copyright © <year> The FreeType
Project (www.freetype.org).  All rights reserved.
"""

Please replace <year> with the value from the FreeType version you
actually use.

Legal Terms
===========

0. Definitions

--------------

Throughout this license,  the terms `package', `FreeType Project',
and  `FreeType  archive' refer  to  the  set  of files  originally
distributed  by the  authors  (David Turner,  Robert Wilhelm,  and
Werner Lemberg) as the `FreeType Project', be they named as alpha,
beta or final release.

`You' refers to  the licensee, or person using  the project, where
`using' is a generic term including compiling the project's source
code as  well as linking it  to form a  `program' or `executable'.
This  program is  referred to  as  `a program  using the  FreeType
engine'.

This  license applies  to all  files distributed  in  the original
FreeType  Project,   including  all  source   code,  binaries  and
documentation,  unless  otherwise  stated   in  the  file  in  its
original, unmodified form as  distributed in the original archive.
If you are  unsure whether or not a particular  file is covered by
this license, you must contact us to verify this.

The FreeType  Project is copyright (C) 1996-2000  by David Turner,
Robert Wilhelm, and Werner Lemberg.  All rights reserved except as
specified below.

1. No Warranty

--------------

THE FREETYPE PROJECT  IS PROVIDED `AS IS' WITHOUT  WARRANTY OF ANY
KIND, EITHER  EXPRESS OR IMPLIED,  INCLUDING, BUT NOT  LIMITED TO,
WARRANTIES  OF  MERCHANTABILITY   AND  FITNESS  FOR  A  PARTICULAR
PURPOSE.  IN NO EVENT WILL ANY OF THE AUTHORS OR COPYRIGHT HOLDERS
BE LIABLE  FOR ANY DAMAGES CAUSED  BY THE USE OR  THE INABILITY TO
USE, OF THE FREETYPE PROJECT.

2. Redistribution

-----------------

This  license  grants  a  worldwide, royalty-free,  perpetual  and
irrevocable right  and license to use,  execute, perform, compile,
display,  copy,   create  derivative  works   of,  distribute  and
sublicense the  FreeType Project (in  both source and  object code
forms)  and  derivative works  thereof  for  any  purpose; and  to
authorize others  to exercise  some or all  of the  rights granted
herein, subject to the following conditions:

    o Redistribution of  source code  must retain this  license file
      (`FTL.TXT') unaltered; any  additions, deletions or changes to
      the original  files must be clearly  indicated in accompanying
      documentation.   The  copyright   notices  of  the  unaltered,
```

```
      original  files must  be  preserved in  all  copies of  source
      files.

    o Redistribution in binary form must provide a  disclaimer  that
      states  that  the software is based in part of the work of the
      FreeType Team,  in  the  distribution  documentation.  We also
      encourage you to put an URL to the FreeType web page  in  your
      documentation, though this isn't mandatory.

These conditions  apply to any  software derived from or  based on
the FreeType Project,  not just the unmodified files.   If you use
our work, you  must acknowledge us.  However, no  fee need be paid
to us.

3. Advertising
--------------

Neither the  FreeType authors and  contributors nor you  shall use
the name of the  other for commercial, advertising, or promotional
purposes without specific prior written permission.

We suggest,  but do not require, that  you use one or  more of the
following phrases to refer  to this software in your documentation
or advertising  materials: `FreeType Project',  `FreeType Engine',
`FreeType library', or `FreeType Distribution'.

As  you have  not signed  this license,  you are  not  required to
accept  it.   However,  as  the FreeType  Project  is  copyrighted
material, only  this license, or  another one contracted  with the
authors, grants you  the right to use, distribute,  and modify it.
Therefore,  by  using,  distributing,  or modifying  the  FreeType
Project, you indicate that you understand and accept all the terms
of this license.

4. Contacts
-----------
There are two mailing lists related to FreeType:

    o freetype@nongnu.org
      Discusses general use and applications of FreeType, as well as
      future and  wanted additions to the  library and distribution.
      If  you are looking  for support,  start in  this list  if you
      haven't found anything to help you in the documentation.
    o freetype-devel@nongnu.org
      Discusses bugs,  as well  as engine internals,  design issues,
      specific licenses, porting, etc.
Our home page can be found at
    https://www.freetype.org


### Additional Freetype Attributions
--------------------------------
The below license applies to the following files:
libfreetype/src/psaux/psarrst.c
libfreetype/src/psaux/psarrst.h
libfreetype/src/psaux/psblues.c
libfreetype/src/psaux/psblues.h
libfreetype/src/psaux/pserror.c
libfreetype/src/psaux/pserror.h
libfreetype/src/psaux/psfixed.h
libfreetype/src/psaux/psfont.c
libfreetype/src/psaux/psfont.h
libfreetype/src/psaux/psft.c
libfreetype/src/psaux/psft.h
libfreetype/src/psaux/psglue.h
libfreetype/src/psaux/pshints.c
libfreetype/src/psaux/pshints.h
```

```
libfreetype/src/psaux/psintrp.c
libfreetype/src/psaux/psintrp.h
libfreetype/src/psaux/psread.c
libfreetype/src/psaux/psread.h
libfreetype/src/psaux/psstack.c
libfreetype/src/psaux/psstack.h
libfreetype/src/psaux/pstypes.h

Copyright 2006-2014 Adobe Systems Incorporated.

This software, and all works of authorship, whether in source or
object code form as indicated by the copyright notice(s) included
herein (collectively, the "Work") is made available, and may only be
used, modified, and distributed under the FreeType Project License,
LICENSE.TXT.  Additionally, subject to the terms and conditions of the
FreeType Project License, each contributor to the Work hereby grants
to any individual or legal entity exercising permissions granted by
the FreeType Project License and this section (hereafter, "You" or
"Your") a perpetual, worldwide, non-exclusive, no-charge,
royalty-free, irrevocable (except as stated in this section) patent
license to make, have made, use, offer to sell, sell, import, and
otherwise transfer the Work, where such license applies only to those
patent claims licensable by such contributor that are necessarily
infringed by their contribution(s) alone or by combination of their
contribution(s) with the Work to which such contribution(s) was
submitted.  If You institute patent litigation against any entity
(including a cross-claim or counterclaim in a lawsuit) alleging that
the Work or a contribution incorporated within the Work constitutes
direct or contributory patent infringement, then any patent licenses
granted to You under this License for that Work shall terminate as of
the date such litigation is filed.

By using, modifying, or distributing the Work you indicate that you
have read and understood the terms and conditions of the
FreeType Project License as well as those provided in this section,
and you accept them fully.

```

MIT License
```

---------------------------------

The below license applies to the following files:
libfreetype/include/freetype/internal/fthash.h
libfreetype/src/base/fthash.c

Copyright 2000 Computing Research Labs, New Mexico State University
Copyright 2001-2015

Francesco Zappa Nardelli

Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL
THE COMPUTING RESEARCH LAB OR NEW MEXICO STATE UNIVERSITY BE LIABLE FOR ANY
```

```
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT
OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
THE USE OR OTHER DEALINGS IN THE SOFTWARE.

================================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
================================================================================

Google Protocol Buffer
----------------------
// Protocol Buffers - Google's data interchange format
// Copyright 2008 Google Inc.  All rights reserved.
// https://developers.google.com/protocol-buffers/
//
// Redistribution and use in source and binary forms, with or without
// modification, are permitted provided that the following conditions are
// met:
//
//     * Redistributions of source code must retain the above copyright
// notice, this list of conditions and the following disclaimer.
//     * Redistributions in binary form must reproduce the above
// copyright notice, this list of conditions and the following disclaimer
// in the documentation and/or other materials provided with the
// distribution.
//     * Neither the name of Google Inc. nor the names of its
// contributors may be used to endorse or promote products derived from
// this software without specific prior written permission.
//
// THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
// "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
// LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
// A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
// OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
// SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
// LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
// DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
// THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
// (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
// OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

================================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
================================================================================

HEIF and AVIF (AV1 Image File Format)
-------------------------------------
* The library `libheif` is distributed under the terms of the GNU Lesser General Public License.
* The sample applications are distributed under the terms of the MIT License.

License texts below and in the `COPYING` files of the corresponding subfolders.

    GNU LESSER GENERAL PUBLIC LICENSE
        Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. http://fsf.org/
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

A copy of the GNU Lesser General Public License v3,   June 2007 license can be found
in the 'Standard Licenses' section

-------------------------------------------------------------------------
```

```
    MIT License

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
================================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
================================================================================

High Efficiency Video Decoding (libde265)
-----------------------------------------
* The library `libheif` is distributed under the terms of the GNU Lesser General Public License.
* The sample applications are distributed under the terms of the MIT License.

License texts below and in the `COPYING` files of the corresponding subfolders.

A copy of the GNU Lesser General Public License v3,   June 2007 license can be found
in the 'Standard Licenses' section
-------------------------------------------------------------------------
    MIT License

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
================================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
================================================================================

Liberation fonts
----------------
Digitized data copyright (c) 2010 Google Corporation
with Reserved Font Arimo, Tinos and Cousine.
Copyright (c) 2012 Red Hat, Inc.
with Reserved Font Name Liberation.

This Font Software is licensed under the SIL Open Font License,
Version 1.1.

This license is copied below, and is also available with a FAQ at:
```

```
http://scripts.sil.org/OFL

SIL OPEN FONT LICENSE Version 1.1 - 26 February 2007

PREAMBLE The goals of the Open Font License (OFL) are to stimulate
worldwide development of collaborative font projects, to support the font
creation efforts of academic and linguistic communities, and to provide
a free and open framework in which fonts may be shared and improved in
partnership with others.

The OFL allows the licensed fonts to be used, studied, modified and
redistributed freely as long as they are not sold by themselves.
The fonts, including any derivative works, can be bundled, embedded,
redistributed and/or sold with any software provided that any reserved
names are not used by derivative works.  The fonts and derivatives,
however, cannot be released under any other type of license.  The
requirement for fonts to remain under this license does not apply to
any document created using the fonts or their derivatives.

DEFINITIONS
"Font Software" refers to the set of files released by the Copyright
Holder(s) under this license and clearly marked as such.
This may include source files, build scripts and documentation.

"Reserved Font Name" refers to any names specified as such after the
copyright statement(s).

"Original Version" refers to the collection of Font Software components
as distributed by the Copyright Holder(s).

"Modified Version" refers to any derivative made by adding to, deleting,
or substituting ? in part or in whole ?
any of the components of the Original Version, by changing formats or
by porting the Font Software to a new environment.

"Author" refers to any designer, engineer, programmer, technical writer
or other person who contributed to the Font Software.

PERMISSION & CONDITIONS

Permission is hereby granted, free of charge, to any person obtaining a
copy of the Font Software, to use, study, copy, merge, embed, modify,
redistribute, and sell modified and unmodified copies of the Font
Software, subject to the following conditions:

1) Neither the Font Software nor any of its individual components,in
   Original or Modified Versions, may be sold by itself.

2) Original or Modified Versions of the Font Software may be bundled,
   redistributed and/or sold with any software, provided that each copy
   contains the above copyright notice and this license. These can be
   included either as stand-alone text files, human-readable headers or
   in the appropriate machine-readable metadata fields within text or
   binary files as long as those fields can be easily viewed by the user.

3) No Modified Version of the Font Software may use the Reserved Font
   Name(s) unless explicit written permission is granted by the
   corresponding Copyright Holder. This restriction only applies to the
   primary font name as presented to the users.

4) The name(s) of the Copyright Holder(s) or the Author(s) of the Font
   Software shall not be used to promote, endorse or advertise any
   Modified Version, except to acknowledge the contribution(s) of the
   Copyright Holder(s) and the Author(s) or with their explicit written
   permission.

5) The Font Software, modified or unmodified, in part or in whole, must
```

```
   be distributed entirely under this license, and must not be distributed
   under any other license. The requirement for fonts to remain under
   this license does not apply to any document created using the Font
   Software.

TERMINATION
This license becomes null and void if any of the above conditions are not met.

DISCLAIMER
THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT
OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT.  IN NO EVENT SHALL THE
COPYRIGHT HOLDER BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL
DAMAGES, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF THE USE OR INABILITY TO USE THE FONT SOFTWARE OR FROM OTHER
DEALINGS IN THE FONT SOFTWARE.
================================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
================================================================================

libwebp
-------
Copyright (c) 2010, Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

* Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.

* Neither the name of Google nor the names of its contributors may
  be used to endorse or promote products derived from this software
  without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---
## Files:
PRESUBMIT.py
infra/common.sh
infra/compile.sh
infra/compile_android.sh
infra/compile_js.sh
infra/run_static_analysis.sh

Copyright (c) 2021, Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
```

```
* Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
  distribution.

* Neither the name of Google nor the names of its contributors may
  be used to endorse or promote products derived from this software
  without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## Files:
sharpyuv/sharpyuv_dsp.h
Copyright 2022 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Speed-critical functions for Sharp YUV.
## Files:
imageio/image_enc.h

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

All-in-one library to save PNG/JPEG/WebP/TIFF/WIC images.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/cost_sse2.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE2 version of cost functions
```

```
Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/dec_clip_tables.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Clipping tables for filtering

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/webp/format_constants.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Internal header for constants related to WebP file format.

Author: Urvang (urvang@google.com)

## Files:

src/dsp/cost_mips32.c
src/dsp/cost_mips_dsp_r2.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Author: Djordje Pesut (djordje.pesut@imgtec.com)

## Files:

extras/extras.h

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

## Files:
```

```
src/dsp/filters.c
src/utils/filters_utils.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Spatial prediction using various filters

Author: Urvang (urvang@google.com)

## Files:

src/utils/bit_writer_utils.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Bit writing and boolean coder

Author: Skal (pascal.massimino@gmail.com)
Vikas Arora (vikaas.arora@gmail.com)

## Files:

src/enc/alpha_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Alpha-plane compression.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/webp/mux.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

RIFF container manipulation and encoding for WebP images.
```

```
Authors: Urvang (urvang@google.com)
Vikas (vikasa@google.com)

## Files:

sharpyuv/sharpyuv_csp.c
sharpyuv/sharpyuv_csp.h

Copyright 2022 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Colorspace utilities.

## Files:

src/dsp/rescaler_sse2.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE2 Rescaling functions

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dec/vp8i_dec.h

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

VP8 decoder: internal header.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dec/quant_dec.c

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Quantizer initialization
```

```
Author: Skal (pascal.massimino@gmail.com)

## Files:

src/enc/syntax_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Header syntax writing

Author: Skal (pascal.massimino@gmail.com)

## Files:

ltmain.sh

This is free software.  There is NO warranty; not even for
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

Copyright (C) 2004-2019, 2021 Bootstrap Authors

This file is dual licensed under the terms of the MIT license
https://opensource.org/license/MIT, and GPL version 2 or later
http://www.gnu.org/licenses/gpl-2.0.html.  You must apply one of
these licenses when using or redistributing this software or any of
the files within it.  See the URLs above, or the file `LICENSE`
included in the Bootstrap distribution for the full license texts.

## Files:

src/dsp/filters_mips_dsp_r2.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Spatial prediction using various filters

Author(s): Branimir Vasic (branimir.vasic@imgtec.com)
Djordje Pesut (djordje.pesut@imgtec.com)

## Files:

src/mux/animi.h

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------
```

```
Internal header for animation related functions.

Author: Hui Su (huisu@google.com)

## Files:

src/dsp/upsampling_mips_dsp_r2.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

YUV to RGB upsampling functions.

Author(s): Branimir Vasic (branimir.vasic@imgtec.com)
Djordje Pesut  (djordje.pesut@imgtec.com)

## Files:

src/utils/utils.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Misc. common utility functions

Authors: Skal (pascal.massimino@gmail.com)
Urvang (urvang@google.com)

## Files:

tests/fuzzer/animdecoder_fuzzer.cc

Copyright 2020 Google Inc.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

////////////////////////////////////////////////////////////////////////

## Files:

examples/anim_diff.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
```

```
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Checks if given pair of animated GIF/WebP images are identical:
That is: their reconstructed canvases match pixel-by-pixel and their other
animation properties (loop count etc) also match.

example: anim_diff foo.gif bar.webp

## Files:

src/dec/vp8l_dec.c

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

main entry for the decoder

Authors: Vikas Arora (vikaas.arora@gmail.com)
Jyrki Alakuijala (jyrki@google.com)

## Files:

src/mux/muxi.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Internal header for mux library.

Author: Urvang (urvang@google.com)

## Files:

src/utils/bit_writer_utils.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Bit writing and boolean coder

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/utils/color_cache_utils.h
```

```
Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Color Cache for WebP Lossless

Authors: Jyrki Alakuijala (jyrki@google.com)
Urvang Joshi (urvang@google.com)

## Files:

tests/fuzzer/advanced_api_fuzzer.c
tests/fuzzer/animation_api_fuzzer.c
tests/fuzzer/animencoder_fuzzer.cc
tests/fuzzer/enc_dec_fuzzer.cc
tests/fuzzer/fuzz_utils.h
tests/fuzzer/img_alpha.h
tests/fuzzer/img_grid.h
tests/fuzzer/img_peak.h
tests/fuzzer/mux_demux_api_fuzzer.c
tests/fuzzer/simple_api_fuzzer.c

Copyright 2018 Google Inc.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

////////////////////////////////////////////////////////////////////////////

## Files:

src/utils/bit_reader_utils.h

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Boolean decoder

Author: Skal (pascal.massimino@gmail.com)
Vikas Arora (vikaas.arora@gmail.com)

## Files:

src/dsp/alpha_processing_mips_dsp_r2.c

Copyright 2014 Google Inc. All Rights Reserved.
```

```
Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Utilities for processing transparent channel.

Author(s): Branimir Vasic (branimir.vasic@imgtec.com)
Djordje Pesut  (djordje.pesut@imgtec.com)

## Files:

imageio/wicdec.c
imageio/wicdec.h

Copyright 2013 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Windows Imaging Component (WIC) decode.

## Files:

src/dsp/dec.c

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Speed-critical decoding functions, default plain-C implementations.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/lossless_mips_dsp_r2.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Image transforms and color space conversion methods for lossless decoder.

Author(s):  Djordje Pesut    (djordje.pesut@imgtec.com)
Jovan Zelincevic (jovan.zelincevic@imgtec.com)

## Files:

src/dsp/filters_neon.c
```

```
Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

NEON variant of alpha filters

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/enc/vp8l_enc.c

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

main entry for the lossless encoder.

Author: Vikas Arora (vikaas.arora@gmail.com)

## Files:

src/dsp/lossless_msa.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MSA variant of methods for lossless decoder

Author: Prashant Patil (prashant.patil@imgtec.com)

## Files:

src/dsp/enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Speed-critical encoding functions.

Author: Skal (pascal.massimino@gmail.com)

## Files:
```

```
src/dsp/cost.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/utils/quant_levels_dec_utils.c

Copyright 2013 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Implement gradient smoothing: we replace a current alpha value by its
surrounding average if it's close enough (that is: the change will be less
than the minimum distance between two quantized level).
We use sliding window for computing the 2d moving average.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dec/alpha_dec.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Alpha-plane decompression.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/webp/demux.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Demux API.
Enables extraction of image and extended format data from WebP files.

## Files:
```

```
extras/get_disto.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Simple tool to load two webp/png/jpg/tiff files and compute PSNR/SSIM.
This is mostly a wrapper around WebPPictureDistortion().

## Files:

src/dsp/upsampling_sse41.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE41 version of YUV to RGB upsampling functions.

Author: somnath@google.com (Somnath Banerjee)

## Files:

sharpyuv/sharpyuv_cpu.c
sharpyuv/sharpyuv_cpu.h

Copyright 2022 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

## Files:

PATENTS

Additional IP Rights Grant (Patents)
------------------------------------

"These implementations" means the copyrightable works that implement the WebM
codecs distributed by Google as part of the WebM Project.

Google hereby grants to you a perpetual, worldwide, non-exclusive, no-charge,
royalty-free, irrevocable (except as stated in this section) patent license to
make, have made, use, offer to sell, sell, import, transfer, and otherwise
run, modify and propagate the contents of these implementations of WebM, where
such license applies only to those patent claims, both currently owned by
Google and acquired in the future, licensable by Google that are necessarily
infringed by these implementations of WebM. This grant does not include claims
that would be infringed only as a consequence of further modification of these
implementations. If you or your agent or exclusive licensee institute or order
or agree to the institution of patent litigation or any other patent
enforcement activity against any entity (including a cross-claim or
```

```
counterclaim in a lawsuit) alleging that any of these implementations of WebM
or any code incorporated within any of these implementations of WebM
constitute direct or contributory patent infringement, or inducement of
patent infringement, then any patent rights granted to you under this License
for these implementations of WebM shall terminate as of the date such
litigation is filed.

## Files:

imageio/image_dec.h

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

All-in-one library to decode PNG/JPEG/WebP/TIFF/WIC input images.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/lossless.c

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Image transforms and color space conversion methods for lossless decoder.

Authors: Vikas Arora (vikaas.arora@gmail.com)
Jyrki Alakuijala (jyrki@google.com)
Urvang Joshi (urvang@google.com)

## Files:

src/dsp/yuv_sse2.c
src/dsp/yuv_sse41.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

YUV->RGB conversion functions

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/lossless_common.h

Copyright 2012 Google Inc. All Rights Reserved.
```

```
Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Image transforms and color space conversion methods for lossless decoder.

Authors: Vikas Arora (vikaas.arora@gmail.com)
Jyrki Alakuijala (jyrki@google.com)
Vincent Rabaud (vrabaud@google.com)

## Files:

src/dsp/rescaler_msa.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MSA version of rescaling functions

Author: Prashant Patil (prashant.patil@imgtec.com)

## Files:

src/mux/anim_encode.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

AnimEncoder implementation.

## Files:

src/utils/huffman_utils.c
src/utils/huffman_utils.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Utilities for building and looking up Huffman trees.

Author: Urvang Joshi (urvang@google.com)

## Files:

src/dsp/lossless_enc_mips_dsp_r2.c
```

```
Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Image transform methods for lossless encoder.

Author(s):  Djordje Pesut    (djordje.pesut@imgtec.com)
Jovan Zelincevic (jovan.zelincevic@imgtec.com)

## Files:

src/utils/thread_utils.c
src/utils/thread_utils.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Multi-threaded worker

Author: Skal (pascal.massimino@gmail.com)

## Files:

imageio/image_dec.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Generic image-type guessing.

## Files:

src/utils/color_cache_utils.c

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Color Cache for WebP Lossless

Author: Jyrki Alakuijala (jyrki@google.com)

## Files:

src/dec/vp8li_dec.h
```

```
Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Lossless decoder: internal header.

Author: Skal (pascal.massimino@gmail.com)
Vikas Arora(vikaas.arora@gmail.com)

## Files:

src/dsp/dec_neon.c

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

ARM NEON version of dsp functions and loop filtering.

Authors: Somnath Banerjee (somnath@google.com)
Johann Koenig (johannkoenig@google.com)

## Files:

src/dsp/quant.h

Copyright 2018 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.

## Files:

src/dsp/ssim_sse2.c

Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE2 version of distortion calculation

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dec/common_dec.h

Copyright 2015 Google Inc. All Rights Reserved.
```

```
Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Definitions and macros common to encoding and decoding

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/yuv.h

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

## Files:

examples/unicode_gif.h

Copyright 2018 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

giflib doesn't have a Unicode DGifOpenFileName(). Let's make one.

Author: Yannis Guyon (yguyon@google.com)

## Files:

src/dec/webpi_dec.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Internal header: WebP decoding parameters and custom IO on buffer

Author: somnath@google.com (Somnath Banerjee)

## Files:

examples/img2webp.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
```

```
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

generate an animated WebP out of a sequence of images
(PNG, JPEG, ...)

Example usage:
img2webp -o out.webp -q 40 -mixed -duration 40 input??.png

Author: skal@google.com (Pascal Massimino)

## Files:

src/webp/mux_types.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Data-types common to the mux and demux libraries.

Author: Urvang (urvang@google.com)

## Files:

src/dsp/enc_neon.c

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

ARM NEON version of speed-critical encoding functions.

adapted from libvpx (https://www.webmproject.org/code/)

## Files:

src/enc/picture_tools_enc.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

WebPPicture tools: alpha handling, etc.

Author: Skal (pascal.massimino@gmail.com)

## Files:

imageio/pnmdec.h
```

```
Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

partial PNM format decoder (ppm/pgm)

## Files:

src/dsp/dsp.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Speed-critical functions.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/enc/histogram_enc.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Author: Jyrki Alakuijala (jyrki@google.com)

Models the histograms of literal and distance codes.

## Files:

src/utils/quant_levels_dec_utils.h

Copyright 2013 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Alpha plane de-quantization utility

Author:  Vikas Arora (vikasa@google.com)

## Files:

src/utils/huffman_encode_utils.h
```

```
Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Author: Jyrki Alakuijala (jyrki@google.com)

Entropy encoding (Huffman) for webp lossless

## Files:

imageio/imageio_util.c
imageio/imageio_util.h

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Utility functions used by the image decoders.

## Files:

src/enc/picture_csp_enc.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

WebPPicture utils for colorspace conversion

Author: Skal (pascal.massimino@gmail.com)

## Files:

examples/cwebp.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

simple command line calling the WebPEncode function.
Encodes a raw .YUV into WebP bitstream

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dec/io_dec.c
```

```
Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

functions for sample output.

Author: Skal (pascal.massimino@gmail.com)

## Files:

examples/dwebp.c

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Command-line tool for decoding a WebP image.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/enc/backward_references_cost_enc.c

Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Improves a given set of backward references by analyzing its bit cost.
The algorithm is similar to the Zopfli compression algorithm but tailored to
images.

Author: Vincent Rabaud (vrabaud@google.com)

## Files:

src/enc/filter_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Selecting filter level

Author: somnath@google.com (Somnath Banerjee)
```

```
## Files:

src/enc/config_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Coding tools configuration

Author: Skal (pascal.massimino@gmail.com)

## Files:

imageio/webpdec.c
imageio/webpdec.h

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

WebP decode.

## Files:

src/dsp/lossless_neon.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

NEON variant of methods for lossless decoder

Author: Skal (pascal.massimino@gmail.com)

## Files:

sharpyuv/sharpyuv_gamma.c
sharpyuv/sharpyuv_gamma.h

Copyright 2022 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Gamma correction utilities.

## Files:
```

```
src/dsp/dec_msa.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MSA version of dsp functions

Author(s):  Prashant Patil   (prashant.patil@imgtec.com)

## Files:

imageio/tiffdec.c
imageio/tiffdec.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

TIFF decode.

## Files:

src/webp/decode.h

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Main decoding functions for WebP images.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dec/vp8_dec.h

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Low-level API for VP8 decoder

Author: Skal (pascal.massimino@gmail.com)

## Files:
```

```
examples/gifdec.h

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

GIF decode.

## Files:

ltmain.sh

Copyright (C) 1996-2019, 2021-2022 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

## Files:

src/dsp/lossless.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Image transforms and color space conversion methods for lossless decoder.

Authors: Vikas Arora (vikaas.arora@gmail.com)
Jyrki Alakuijala (jyrki@google.com)

## Files:

src/dsp/mips_macro.h

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MIPS common macros

## Files:

src/dsp/rescaler_neon.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------
```

```
NEON version of rescaling functions

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/msa_macro.h

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MSA common macros

Author(s):  Prashant Patil   (prashant.patil@imgtec.com)

## Files:

src/dec/frame_dec.c

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Frame-reconstruction function. Memory allocation.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/yuv_mips32.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MIPS version of YUV to RGB upsampling functions.

Author(s):  Djordje Pesut    (djordje.pesut@imgtec.com)
Jovan Zelincevic (jovan.zelincevic@imgtec.com)

## Files:

src/enc/iterator_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
```

```
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

VP8Iterator: block iterator

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/enc_msa.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MSA version of encoder dsp functions.

Author:  Prashant Patil   (prashant.patil@imgtec.com)

## Files:

src/utils/bit_reader_utils.c

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Boolean decoder non-inlined methods

Author: Skal (pascal.massimino@gmail.com)

## Files:

examples/gif2webp.c

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

simple tool to convert animated GIFs to WebP

Authors: Skal (pascal.massimino@gmail.com)
Urvang (urvang@google.com)

## Files:

extras/webp_to_sdl.c
extras/webp_to_sdl.h

Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
```

```
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------------

Simple WebP-to-SDL wrapper. Useful for emscripten.

Author: James Zern (jzern@google.com)

## Files:

src/enc/picture_psnr_enc.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------------

WebPPicture tools for measuring distortion

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/enc_sse41.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------------

SSE4 version of some encoding functions.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/yuv_neon.c

Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------------

YUV->RGB conversion functions

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/utils/utils.c

Copyright 2012 Google Inc. All Rights Reserved.
```

```
Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Misc. common utility functions

Author: Skal (pascal.massimino@gmail.com)

## Files:

examples/anim_dump.c

Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Decodes an animated WebP file and dumps the decoded frames as PNG or TIFF.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/ssim.c

Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

distortion calculation

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/demux/demux.c

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

WebP container demux.

## Files:

src/dsp/filters_msa.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
```

```
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MSA variant of alpha filters

Author: Prashant Patil (prashant.patil@imgtec.com)

## Files:

src/dec/vp8_dec.c

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

main entry for the decoder

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/enc/cost_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Cost tables for level and modes

Author: Skal (pascal.massimino@gmail.com)

## Files:

imageio/pnmdec.c

Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

(limited) PNM decoder

## Files:

src/dec/buffer_dec.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
```

```
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Everything about WebPDecBuffer

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/rescaler_mips32.c
src/dsp/rescaler_mips_dsp_r2.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MIPS version of rescaling functions

Author(s): Djordje Pesut (djordje.pesut@imgtec.com)

## Files:

src/dsp/alpha_processing_sse2.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Utilities for processing transparent channel.

Author: Skal (pascal.massimino@gmail.com)

## Files:

extras/vwebp_sdl.c

Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Simple SDL-based WebP file viewer.
Does not support animation, just static images.

Press 'q' to exit.

Author: James Zern (jzern@google.com)

## Files:

src/dsp/lossless_sse2.c
```

```
Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE2 variant of methods for lossless decoder

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/webp/types.h

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Common types + memory wrappers

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/lossless_enc_msa.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MSA variant of Image transform methods for lossless encoder.

Authors: Prashant Patil (Prashant.Patil@imgtec.com)

## Files:

src/webp/encode.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

WebP encoder: main interface

Author: Skal (pascal.massimino@gmail.com)

## Files:
```

```
imageio/image_enc.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Save image

## Files:

examples/gifdec.c

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

GIF decode.

## Files:

src/mux/muxinternal.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Internal objects and utils for mux.

Authors: Urvang (urvang@google.com)
Vikas (vikasa@google.com)

## Files:

examples/webpinfo.c

Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Command-line tool to print out the chunk level structure of WebP files
along with basic integrity checks.

Author: Hui Su (huisu@google.com)

## Files:

src/dsp/common_sse41.h
```

```
Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE4 code common to several files.

Author: Vincent Rabaud (vrabaud@google.com)

## Files:

src/enc/analysis_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Macroblock analysis

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/yuv_mips_dsp_r2.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MIPS DSPr2 version of YUV to RGB upsampling functions.

Author(s):  Branimir Vasic (branimir.vasic@imgtec.com)
Djordje Pesut  (djordje.pesut@imgtec.com)

## Files:

src/enc/token_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Paginated token buffer

A 'token' is a bit value associated with a probability, either fixed
or a later-to-be-determined after statistics have been collected.
For dynamic probability, we just record the slot id (idx) for the probability
```

```
value in the final probability array (uint8_t* probas in VP8EmitTokens).

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/utils/quant_levels_utils.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Alpha plane quantization utility

Author:  Vikas Arora (vikasa@google.com)

## Files:

sharpyuv/sharpyuv_dsp.c
sharpyuv/sharpyuv_neon.c
sharpyuv/sharpyuv_sse2.c

Copyright 2022 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Speed-critical functions for Sharp YUV.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/upsampling.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

YUV to RGB upsampling functions.

Author: somnath@google.com (Somnath Banerjee)

## Files:

src/dec/idec_dec.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
```

```
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Incremental decoding

Author: somnath@google.com (Somnath Banerjee)

## Files:

src/dsp/dec_mips32.c
src/dsp/dec_mips_dsp_r2.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MIPS version of dsp functions

Author(s):  Djordje Pesut    (djordje.pesut@imgtec.com)
Jovan Zelincevic (jovan.zelincevic@imgtec.com)

## Files:

src/enc/picture_rescale_enc.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

WebPPicture tools: copy, crop, rescaling and view.

Author: Skal (pascal.massimino@gmail.com)

## Files:

examples/stopwatch.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Helper functions to measure elapsed time.

Author: Mikolaj Zalewski (mikolajz@google.com)

## Files:

src/enc/vp8li_enc.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
```

```
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Lossless encoder: internal header.

Author: Vikas Arora (vikaas.arora@gmail.com)

## Files:

examples/webpmux.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Simple command-line to create a WebP container file and to extract or strip
relevant data from the container file.

Authors: Vikas (vikaas.arora@gmail.com),
Urvang (urvang@google.com)

## Files:

src/dsp/cpu.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

CPU detection

Author: Christian Duvivier (cduvivier@google.com)

## Files:

src/dsp/common_sse2.h

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE2 code common to several files.

Author: Vincent Rabaud (vrabaud@google.com)

## Files:

src/enc/quant_enc.c
```

```
Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Quantization

Author: Skal (pascal.massimino@gmail.com)

## Files:

extras/extras.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Additional WebP utilities.

## Files:

src/utils/quant_levels_utils.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Quantize levels for specified number of quantization-levels ([2, 256]).
Min and max values are preserved (usual 0 and 255 for alpha plane).

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/enc/cost_enc.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Cost tables for level and modes.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/enc/near_lossless_enc.c
```

```
Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Near-lossless image preprocessing adjusts pixel values to help
compressibility with a guarantee of maximum deviation between original and
resulting pixel values.

Author: Jyrki Alakuijala (jyrki@google.com)
Converted to C by Aleksander Kramarz (akramarz@google.com)

## Files:

src/utils/bit_reader_inl_utils.h

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Specific inlined methods for boolean decoder [VP8GetBit() ...]
This file should be included by the .c sources that actually need to call
these methods.

Author: Skal (pascal.massimino@gmail.com)

## Files:

examples/example_util.c
examples/example_util.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Utility functions used by the example programs.

## Files:

src/utils/huffman_encode_utils.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Author: Jyrki Alakuijala (jyrki@google.com)

Entropy encoding (Huffman) for webp lossless.
```

```
## Files:

src/dsp/upsampling_neon.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

NEON version of YUV to RGB upsampling functions.

Author: mans@mansr.com (Mans Rullgard)
Based on SSE code by: somnath@google.com (Somnath Banerjee)

## Files:

src/dsp/neon.h

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

NEON common code.

## Files:

src/dsp/dec_sse2.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE2 version of some decoding functions (idct, loop filtering).

Author: somnath@google.com (Somnath Banerjee)
cduvivier@google.com (Christian Duvivier)

## Files:

src/utils/filters_utils.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

filter estimation
```

```
Author: Urvang (urvang@google.com)

## Files:

ltmain.sh

GNU Libtool is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

As a special exception to the GNU General Public License,
if you distribute this file as part of a program or library that
is built using GNU Libtool, you may include this file under the
same distribution terms that you use for the rest of that program.

GNU Libtool is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program.  If not, see http://www.gnu.org/licenses/.

## Files:

src/dsp/lossless_enc_mips32.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MIPS version of lossless functions

Author(s):  Djordje Pesut    (djordje.pesut@imgtec.com)
Jovan Zelincevic (jovan.zelincevic@imgtec.com)

## Files:

src/utils/random_utils.c
src/utils/random_utils.h

Copyright 2013 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Pseudo-random utilities

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/alpha_processing_neon.c

Copyright 2017 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
```

```
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Utilities for processing transparent channel, NEON version.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/enc_mips32.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MIPS version of speed-critical encoding functions.

Author(s): Djordje Pesut    (djordje.pesut@imgtec.com)
Jovan Zelincevic (jovan.zelincevic@imgtec.com)
Slobodan Prijic  (slobodan.prijic@imgtec.com)

## Files:

src/enc/vp8i_enc.h

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

WebP encoder: internal header.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/filters_sse2.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE2 variant of alpha filters

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/lossless_enc_sse41.c
```

```
Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE4.1 variant of methods for lossless encoder

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/enc/predictor_enc.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Image transform methods for lossless encoder.

Authors: Vikas Arora (vikaas.arora@gmail.com)
Jyrki Alakuijala (jyrki@google.com)
Urvang Joshi (urvang@google.com)
Vincent Rabaud (vrabaud@google.com)

## Files:

src/mux/muxread.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

## Files:

extras/quality_estimate.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

VP8EstimateQuality(): rough encoding quality estimate

Author: Skal (pascal.massimino@gmail.com)

## Files:

examples/anim_util.c
examples/anim_util.h
```

```
Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Utilities for animated images

## Files:

src/dsp/upsampling_msa.c

Copyright 2016 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MSA version of YUV to RGB upsampling functions.

Author: Prashant Patil (prashant.patil@imgtec.com)

## Files:

src/dsp/lossless_enc_sse2.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE2 variant of methods for lossless encoder

Author: Skal (pascal.massimino@gmail.com)

## Files:

swig/libwebp.swig

Copyright 2011 Google Inc.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

libwebp swig interface definition

Author: James Zern (jzern@google.com)

## Files:

src/utils/rescaler_utils.c
src/utils/rescaler_utils.h
```

```
Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Rescaling functions

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/demux/anim_decode.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

AnimDecoder implementation.

## Files:

src/enc/backward_references_enc.c
src/enc/backward_references_enc.h
src/enc/histogram_enc.c

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Author: Jyrki Alakuijala (jyrki@google.com)

## Files:

src/enc/tree_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Coding of token probabilities, intra modes and segments.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/cost_neon.c
```

```
Copyright 2018 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

ARM NEON version of cost functions

## Files:

src/enc/picture_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

WebPPicture class basis

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dec/webp_dec.c

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Main decoding functions for WEBP images.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/lossless_enc.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Image transform methods for lossless encoder.

Authors: Vikas Arora (vikaas.arora@gmail.com)
Jyrki Alakuijala (jyrki@google.com)
Urvang Joshi (urvang@google.com)

## Files:

imageio/pngdec.c
```

```
imageio/pngdec.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

PNG decode.

## Files:

src/dec/tree_dec.c

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Coding trees and probas

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/lossless_sse41.c

Copyright 2021 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE41 variant of methods for lossless decoder

## Files:

src/dsp/enc_mips_dsp_r2.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

MIPS version of speed-critical encoding functions.

Author(s): Darko Laus (darko.laus@imgtec.com)
Mirko Raus (mirko.raus@imgtec.com)

## Files:

ltmain.sh
```

```
func_version
------------

Echo version message to standard output and exit.
The version message is extracted from the calling file's header
comments, with leading '# ' stripped:
1. First display the progname and version
2. Followed by the header comment line matching  /^# Written by /
3. Then a blank line followed by the first following line matching
   /^# Copyright /
4. Immediately followed by any lines between the previous matches,
   except lines preceding the intervening completely blank line.
   For example, see the header comments of this file.

## Files:

sharpyuv/sharpyuv.h

Copyright 2022 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Sharp RGB to YUV conversion.

## Files:

src/dsp/yuv.c

Copyright 2010 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

YUV->RGB conversion functions

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/cpu.h

Copyright 2022 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

CPU detection functions and macros.

Author: Skal (pascal.massimino@gmail.com)

## Files:

sharpyuv/sharpyuv.c
```

```
Copyright 2022 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Sharp RGB to YUV conversion.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/upsampling_sse2.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE2 version of YUV to RGB upsampling functions.

Author: somnath@google.com (Somnath Banerjee)

## Files:

src/utils/endian_inl_utils.h

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Endian related functions.

## Files:

examples/vwebp.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Simple OpenGL-based WebP file viewer.

Author: Skal (pascal.massimino@gmail.com)

## Files:

imageio/jpegdec.c
imageio/jpegdec.h
```

```
Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

JPEG decode.

## Files:

src/dsp/alpha_processing_sse41.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Utilities for processing transparent channel, SSE4.1 variant.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/enc/webp_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

WebP encoder: main entry point

Author: Skal (pascal.massimino@gmail.com)

## Files:

imageio/metadata.c
imageio/metadata.h

Copyright 2012 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Metadata types and functions.

## Files:

.cmake-format.py

If comment markup is enabled, don't reflow the first comment block in each
listfile. Use this to preserve formatting of your copyright/license
```

```
statements.

## Files:

src/enc/frame_enc.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

frame coding and analysis

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/dec_sse41.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

SSE4 version of some decoding functions.

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dec/alphai_dec.h

Copyright 2013 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Alpha decoder: internal header.

Author: Urvang (urvang@google.com)

## Files:

src/dsp/alpha_processing.c

Copyright 2013 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Utilities for processing transparent channel.
```

```
Author: Skal (pascal.massimino@gmail.com)

## Files:

src/mux/muxedit.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Set and delete APIs for mux.

Authors: Urvang (urvang@google.com)
Vikas (vikasa@google.com)

## Files:

ltmain.sh

This is free software.  There is NO warranty; not even for
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

Copyright (C) 2010-2019, 2021 Bootstrap Authors

This file is dual licensed under the terms of the MIT license
https://opensource.org/license/MIT, and GPL version 2 or later
http://www.gnu.org/licenses/gpl-2.0.html.  You must apply one of
these licenses when using or redistributing this software or any of
the files within it.  See the URLs above, or the file `LICENSE`
included in the Bootstrap distribution for the full license texts.

## Files:

examples/unicode.h

Copyright 2018 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Unicode support for Windows. The main idea is to maintain an array of Unicode
arguments (wargv) and use it only for file paths. The regular argv is used
for everything else.

Author: Yannis Guyon (yguyon@google.com)

## Files:

src/dsp/enc_sse2.c

Copyright 2011 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
```

```
-----------------------------------------------------------

SSE2 version of speed-critical encoding functions.

Author: Christian Duvivier (cduvivier@google.com)

## Files:

src/dsp/rescaler.c

Copyright 2014 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

Rescaling functions

Author: Skal (pascal.massimino@gmail.com)

## Files:

src/dsp/lossless_enc_neon.c

Copyright 2015 Google Inc. All Rights Reserved.

Use of this source code is governed by a BSD-style license
that can be found in the COPYING file in the root of the source
tree. An additional intellectual property rights grant can be found
in the file PATENTS. All contributing project authors may
be found in the AUTHORS file in the root of the source tree.
-----------------------------------------------------------

NEON variant of methods for lossless encoder

slf4j-api     2.0.16

Copyright (c) 2004-2023 QOS.ch
All rights reserved.

Permission is hereby granted, free  of charge, to any person obtaining
a  copy  of this  software  and  associated  documentation files  (the
"Software"), to  deal in  the Software without  restriction, including
without limitation  the rights to  use, copy, modify,  merge, publish,
distribute,  sublicense, and/or sell  copies of  the Software,  and to
permit persons to whom the Software  is furnished to do so, subject to
the following conditions:

The  above  copyright  notice  and  this permission  notice  shall  be
included in all copies or substantial portions of the Software.

THE  SOFTWARE IS  PROVIDED  "AS  IS", WITHOUT  WARRANTY  OF ANY  KIND,
EXPRESS OR  IMPLIED, INCLUDING  BUT NOT LIMITED  TO THE  WARRANTIES OF
MERCHANTABILITY,    FITNESS    FOR    A   PARTICULAR    PURPOSE    AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE,  ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
================================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
================================================================================

LZMA SDK
--------
```

```
Copyright (c) 1999-2018 Igor Pavlov
LZMA SDK is placed in the public domain.Anyone is free to copy, modify, publish, use,
compile, sell, or distribute the original LZMA SDK code, either in source code form or as a
compiled binary, for any purpose, commercial or non-commercial, and by any
means.
============================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
============================================================================

Open Design Libraries
---------------------
// Copyright (C) 2002-2024, Open Design Alliance (the “Alliance”).
// All rights reserved.
//
// This software and its documentation and related materials are owned by
// the Alliance. The software may only be incorporated into application
// programs owned by members of the Alliance, subject to a signed
// Membership Agreement and Supplemental Software License Agreement with the
// Alliance. The structure and organization of this software are the valuable
// trade secrets of the Alliance and its suppliers. The software is also
// protected by copyright law and international treaty provisions. Application
// programs incorporating this software must include the following statement
// with their copyright notices:
//
//  This application incorporates Open Design Alliance software pursuant to a license
//  agreement with Open Design Alliance.
//  Open Design Alliance Copyright (C) 2002-2024 by Open Design Alliance.
//  All rights reserved.
//
// By use of this software, its documentation or related materials, you
// acknowledge and accept the above terms.
============================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
============================================================================

OpenJpeg
--------
/*
* The copyright in this software is being made available under the 2-clauses
* BSD License, included below. This software may be subject to other third
* party and contributor rights, including patent rights, and no such rights
* are granted under this license.
*
* Copyright (c) 2002-2014, Universite catholique de Louvain (UCL), Belgium
* Copyright (c) 2002-2014, Professor Benoit Macq
* Copyright (c) 2003-2014, Antonin Descampe
* Copyright (c) 2003-2009, Francois-Olivier Devaux
* Copyright (c) 2005, Herve Drolon, FreeImage Team
* Copyright (c) 2002-2003, Yannick Verschueren
* Copyright (c) 2001-2003, David Janssens
* Copyright (c) 2011-2012, Centre National d'Etudes Spatiales (CNES), France
* Copyright (c) 2012, CS Systemes d'Information, France
*
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS `AS IS'
* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
```

```
* ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
* POSSIBILITY OF SUCH DAMAGE.
  */

* Copyright (c) 2002-2014, Universite catholique de Louvain (UCL), Belgium
* Copyright (c) 2002-2014, Professor Benoit Macq
* Copyright (c) 2003-2014, Antonin Descampe
* Copyright (c) 2003-2009, Francois-Olivier Devaux
* Copyright (c) 2005, Herve Drolon, FreeImage Team
* Copyright (c) 2002-2003, Yannick Verschueren
* Copyright (c) 2001-2003, David Janssens
* Copyright (c) 2011-2012, Centre National d'Etudes Spatiales (CNES), France
* Copyright (c) 2012, CS Systemes d'Information, France

  --------------------------- Fourth-party information ----------------------
.astyle
-------
.### MIT License

Copyright (c) 2017 by Jim Pattee jimp03@email.com.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.
== Copyright Notices
Copyright (c) 2017 by Jim Pattee jimp03@email.com.
--------------------------------(separator)--------------------------------

libz
----
/* zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.8, April 28th, 2013

Copyright (C) 1995-2013 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied
warranty.  In no event will the authors be held liable for any damages
arising from the use of this software.

Permission is granted to anyone to use this software for any purpose,
including commercial applications, and to alter it and redistribute it
freely, subject to the following restrictions:
1.  The origin of this software must not be misrepresented; you must not
    claim that you wrote the original software. If you use this software
    in a product, an acknowledgment in the product documentation would be
    appreciated but is not required.
2.  Altered source versions must be plainly marked as such, and must not be
```

```
    misrepresented as being the original software.
3.  This notice may not be removed or altered from any source distribution.

Jean-loup Gailly        Mark Adler
jloup@gzip.org          madler@alumni.caltech.edu

The data format used by the zlib library is described by RFCs (Request for
Comments) 1950 to 1952 in the files http://tools.ietf.org/html/rfc1950
(zlib format), rfc1951 (deflate format) and rfc1952 (gzip format).
*/

--------------------------------(separator)--------------------------------

.Little CMS
-----------
Copyright (c) 1998-2011 Marti Maria Saguer

Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the "Software"),
to deal in the Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute, sublicense,
and/or sell copies of the Software, and to permit persons to whom the
Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE
USE OR OTHER DEALINGS IN THE SOFTWARE.

--------------------------------(separator)--------------------------------

.libpng
-------
This copy of the libpng notices is provided for your convenience.  In case of
any discrepancy between this copy and the notices in the file png.h that is
included in the libpng distribution, the latter shall prevail.

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE:

If you modify libpng you may insert additional notices immediately following
this sentence.

This code is released under the libpng license.

libpng versions 1.0.7, July 1, 2000 through 1.6.25, September 1, 2016 are
Copyright (c) 2000-2002, 2004, 2006-2016 Glenn Randers-Pehrson, are
derived from libpng-1.0.6, and are distributed according to the same
disclaimer and license as libpng-1.0.6 with the following individuals
added to the list of Contributing Authors:

Simon-Pierre Cadieux
Eric S. Raymond
Mans Rullgard
Cosmin Truta
Gilles Vollant
James Yu

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the
library or against infringement.  There is no warranty that our
```

```
efforts or the library will fulfill any of your particular purposes
or needs.  This library is provided with all faults, and the entire
risk of satisfactory quality, performance, accuracy, and effort is with
the user.

Some files in the "contrib" directory and some configure-generated
files that are distributed with libpng have other copyright owners and
are released under other open source licenses.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are
Copyright (c) 1998-2000 Glenn Randers-Pehrson, are derived from
libpng-0.96, and are distributed according to the same disclaimer and
license as libpng-0.96, with the following individuals added to the list
of Contributing Authors:

Tom Lane
Glenn Randers-Pehrson
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are
Copyright (c) 1996-1997 Andreas Dilger, are derived from libpng-0.88,
and are distributed according to the same disclaimer and license as
libpng-0.88, with the following individuals added to the list of
Contributing Authors:

John Bowler
Kevin Bracey
Sam Bushell
Magnus Holmgren
Greg Roelofs
Tom Tanner

Some files in the "scripts" directory have other copyright owners
but are released under this license.

libpng versions 0.5, May 1995, through 0.88, January 1996, are
Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors"
is defined as the following set of individuals:

Andreas Dilger
Dave Martindale
Guy Eric Schalnat
Paul Schmidt
Tim Wegner

The PNG Reference Library is supplied "AS IS".  The Contributing Authors
and Group 42, Inc. disclaim all warranties, expressed or implied,
including, without limitation, the warranties of merchantability and of
fitness for any purpose.  The Contributing Authors and Group 42, Inc.
assume no liability for direct, indirect, incidental, special, exemplary,
or consequential damages, which may result from the use of the PNG
Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this
source code, or portions hereof, for any purpose, without fee, subject
to the following restrictions:
1.   The origin of this source code must not be misrepresented.
2.   Altered versions must be plainly marked as such and must not
     be misrepresented as being the original source.
3.   This Copyright notice may not be removed or altered from any
     source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without
fee, and encourage the use of this source code as a component to
supporting the PNG file format in commercial products.  If you use this
```

```
source code in a product, acknowledgment is not required but would be
appreciated.

END OF COPYRIGHT NOTICE, DISCLAIMER, and LICENSE.

TRADEMARK:

The name "libpng" has not been registered by the Copyright owner
as a trademark in any jurisdiction.  However, because libpng has
been distributed and maintained world-wide, continually since 1995,
the Copyright owner claims "common-law trademark protection" in any
jurisdiction where common-law trademark is recognized.

OSI CERTIFICATION:

Libpng is OSI Certified Open Source Software.  OSI Certified Open Source is
a certification mark of the Open Source Initiative. OSI has not addressed
the additional disclaimers inserted at version 1.0.7.

EXPORT CONTROL:

The Copyright owner believes that the Export Control Classification
Number (ECCN) for libpng is EAR99, which means not subject to export
controls or International Traffic in Arms Regulations (ITAR) because
it is open source, publicly available software, that does not contain
any encryption software.  See the EAR, paragraphs 734.3(b)(3) and
734.7(b).

Glenn Randers-Pehrson
glennrp at users.sourceforge.net
September 1, 2016

--------------------------------(separator)--------------------------------

.libtiff
--------
/*
* Copyright (c) 2009 Frank Warmerdam
*
* Permission to use, copy, modify, distribute, and sell this software and
* its documentation for any purpose is hereby granted without fee, provided
* that (i) the above copyright notices and this permission notice appear in
* all copies of the software and related documentation, and (ii) the names of
* Sam Leffler and Silicon Graphics may not be used in any advertising or
* publicity relating to the software without the specific, prior written
* permission of Sam Leffler and Silicon Graphics.
*
* THE SOFTWARE IS PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND,
* EXPRESS, IMPLIED OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY
* WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
*
* IN NO EVENT SHALL SAM LEFFLER OR SILICON GRAPHICS BE LIABLE FOR
* ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND,
* OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS,
* WHETHER OR NOT ADVISED OF THE POSSIBILITY OF DAMAGE, AND ON ANY THEORY OF
* LIABILITY, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE
* OF THIS SOFTWARE.
*/
==============================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
==============================================================================

PDFBox
------
Apache License 2.0

                Apache License
```

```
          Version 2.0, January 2004
       http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

4th party dependencies
----------------------
Apache PDFBox includes a number of components with separate copyright notices
and license terms. Your use of these components is subject to the terms and
conditions of the following licenses.

Contributions made to the original PDFBox and FontBox projects:

Copyright (c) 2002-2007, www.pdfbox.org
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. Neither the name of pdfbox; nor the names of its contributors may be
   used to endorse or promote products derived from this software without
   specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

Adobe Font Metrics (AFM) for PDF Core 14 Fonts
----------------------------------------------
This file and the 14 PostScript(R) AFM files it accompanies may be used,
copied, and distributed for any purpose and without charge, with or without
modification, provided that all copyright notices are retained; that the
AFM files are not distributed without this file; that all modifications
to this file or any of the AFM files are prominently noted in the modified
file(s); and that this paragraph is not modified. Adobe Systems has no
responsibility or obligation to support the use of the AFM files.

CMaps for PDF Fonts (http://opensource.adobe.com/wiki/display/cmap/Downloads)
------------------------------------------------------------------------------
Copyright 1990-2009 Adobe Systems Incorporated.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
 - Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.
 - Redistributions in binary form must reproduce the above copyright notice,
   this list of conditions and the following disclaimer in the documentation
   and/or other materials provided with the distribution.
 - Neither the name of Adobe Systems Incorporated nor the names of its
   contributors may be used to endorse or promote products derived from this
   software without specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
```

```
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
THE POSSIBILITY OF SUCH DAMAGE.

PaDaF PDF/A preflight (http://sourceforge.net/projects/padaf)
--------------------
Copyright 2010 Atos Worldline SAS
Licensed by Atos Worldline SAS under one or more
contributor license agreements.  See the NOTICE file distributed with
this work for additional information regarding copyright ownership.
Atos Worldline SAS licenses this file to You under the Apache License, Version 2.0
(the "License"); you may not use this file except in compliance with
the License.  You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

OSXAdapter
----------
Version: 2.0
Disclaimer: IMPORTANT:  This Apple software is supplied to you by
Apple Inc. ("Apple") in consideration of your agreement to the
following terms, and your use, installation, modification or
redistribution of this Apple software constitutes acceptance of these
terms.  If you do not agree with these terms, please do not use,
install, modify or redistribute this Apple software.

In consideration of your agreement to abide by the following terms, and
subject to these terms, Apple grants you a personal, non-exclusive
license, under Apple's copyrights in this original Apple software (the
"Apple Software"), to use, reproduce, modify and redistribute the Apple
Software, with or without modifications, in source and/or binary forms;
provided that if you redistribute the Apple Software in its entirety and
without modifications, you must retain this notice and the following
text and disclaimers in all such redistributions of the Apple Software.
Neither the name, trademarks, service marks or logos of Apple Inc.
may be used to endorse or promote products derived from the Apple
Software without specific prior written permission from Apple.  Except
as expressly stated in this notice, no other rights or licenses, express
or implied, are granted by Apple herein, including but not limited to
any patent rights that may be infringed by your derivative works or by
other works in which the Apple Software may be incorporated.

The Apple Software is provided by Apple on an "AS IS" basis.  APPLE
MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION
THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE, REGARDING THE APPLE SOFTWARE OR ITS USE AND
OPERATION ALONE OR IN COMBINATION WITH YOUR PRODUCTS.

IN NO EVENT SHALL APPLE BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) ARISING IN ANY WAY OUT OF THE USE, REPRODUCTION,
MODIFICATION AND/OR DISTRIBUTION OF THE APPLE SOFTWARE, HOWEVER CAUSED
AND WHETHER UNDER THEORY OF CONTRACT, TORT (INCLUDING NEGLIGENCE),
STRICT LIABILITY OR OTHERWISE, EVEN IF APPLE HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.
```

```
Copyright (C) 2003-2007 Apple, Inc., All Rights Reserved

PdfBox Notice:

Based on source code contributed to the original PDFBox project.
Copyright (c) 2002-2007, www.pdfbox.org

Includes the Adobe Glyph List
Copyright 1997, 1998, 2002, 2007, 2010 Adobe Systems Incorporated.

Includes the Zapf Dingbats Glyph List
Copyright 2002, 2010 Adobe Systems Incorporated.

Includes the Bidi Mirroring Glyph Property (BidiMirroring-8.0.0.txt)
Copyright 1991-2015 Unicode, Inc.

Includes parts of TwelveMonkeys ImageIO
Copyright 2008-2016 Harald Kuhr

Includes the CMYK ICC-profile (CGATS001Compat-v2-micro.icc)
https://github.com/saucecontrol/Compact-ICC-Profiles
Released to the public domain under the Creative Commons CC0 license by Clinton Ingram, saucecontrol
-------------------------

FontBox License:

CONTRIBUTIONS TO THE ORIGINAL CODEBASE

Apache FontBox is based on contributions made to the original FontBox project:

Copyright (c) 2006-2007, www.fontbox.org
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. Neither the name of fontbox; nor the names of its contributors may be
   used to endorse or promote products derived from this software without
   specific prior written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

Lohit-Bengali, Lohit-Devangari, Lohit-Gujarati fonts (https://pagure.io/lohit):

Copyright 2011-15 Lohit Fonts Project contributors

This Font Software is licensed under the SIL Open Font License, Version 1.1.
This license is copied below, and is also available with a FAQ at:
http://scripts.sil.org/OFL
-----------------------------------------------------------

SIL OPEN FONT LICENSE Version 1.1 - 26 February 2007
---------------------------------------------------
```

```
PREAMBLE
The goals of the Open Font License (OFL) are to stimulate worldwide
development of collaborative font projects, to support the font creation
efforts of academic and linguistic communities, and to provide a free and
open framework in which fonts may be shared and improved in partnership
with others.

The OFL allows the licensed fonts to be used, studied, modified and
redistributed freely as long as they are not sold by themselves. The
fonts, including any derivative works, can be bundled, embedded,
redistributed and/or sold with any software provided that any reserved
names are not used by derivative works. The fonts and derivatives,
however, cannot be released under any other type of license. The
requirement for fonts to remain under this license does not apply
to any document created using the fonts or their derivatives.

DEFINITIONS
"Font Software" refers to the set of files released by the Copyright
Holder(s) under this license and clearly marked as such. This may
include source files, build scripts and documentation.

"Reserved Font Name" refers to any names specified as such after the
copyright statement(s).

"Original Version" refers to the collection of Font Software components as
distributed by the Copyright Holder(s).

"Modified Version" refers to any derivative made by adding to, deleting,
or substituting -- in part or in whole -- any of the components of the
Original Version, by changing formats or by porting the Font Software to a
new environment.

"Author" refers to any designer, engineer, programmer, technical
writer or other person who contributed to the Font Software.

PERMISSION & CONDITIONS
Permission is hereby granted, free of charge, to any person obtaining
a copy of the Font Software, to use, study, copy, merge, embed, modify,
redistribute, and sell modified and unmodified copies of the Font
Software, subject to the following conditions:
1) Neither the Font Software nor any of its individual components,
   in Original or Modified Versions, may be sold by itself.
2) Original or Modified Versions of the Font Software may be bundled,
   redistributed and/or sold with any software, provided that each copy
   contains the above copyright notice and this license. These can be
   included either as stand-alone text files, human-readable headers or
   in the appropriate machine-readable metadata fields within text or
   binary files as long as those fields can be easily viewed by the user.
3) No Modified Version of the Font Software may use the Reserved Font
   Name(s) unless explicit written permission is granted by the corresponding
   Copyright Holder. This restriction only applies to the primary font name as
   presented to the users.
4) The name(s) of the Copyright Holder(s) or the Author(s) of the Font
   Software shall not be used to promote, endorse or advertise any
   Modified Version, except to acknowledge the contribution(s) of the
   Copyright Holder(s) and the Author(s) or with their explicit written
   permission.
5) The Font Software, modified or unmodified, in part or in whole,
   must be distributed entirely under this license, and must not be
   distributed under any other license. The requirement for fonts to
   remain under this license does not apply to any document created
   using the Font Software.

TERMINATION
This license becomes null and void if any of the above conditions are
not met.
```

```
DISCLAIMER
THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT
OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT. IN NO EVENT SHALL THE
COPYRIGHT HOLDER BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL
DAMAGES, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF THE USE OR INABILITY TO USE THE FONT SOFTWARE OR FROM
OTHER DEALINGS IN THE FONT SOFTWARE.

FontBox Notice:
Based on source code contributed to the original FontBox project.
Copyright (c) 2006-2007, www.fontbox.org

Includes the Script Property (Scripts-10.0.0.txt)
Copyright 2017 Unicode, Inc.
---

Apache Commons Logging
----------------------
Copyright 2001-2024 The Apache Software Foundation
This product includes software developed at
The Apache Software Foundation (https://www.apache.org/).
FOURTH-PARTY DEPENDENCY #1 LICENSE: Apache 2.0

Apache PDFBox IO
----------------
Copyright 2003-2014 The Apache Software Foundation
This product includes software developed at
The Apache Software Foundation (http://www.apache.org/).
FOURTH-PARTY DEPENDENCY #2 LICENSE: Apache 2.0

Apache FontBox
--------------
Based on source code contributed to the original FontBox project.
Copyright (c) 2006-2007, www.fontbox.org
Includes the Script Property (Scripts-10.0.0.txt)
Copyright 2017 Unicode, Inc.
FOURTH-PARTY DEPENDENCY #3 LICENSE: Apache 2.0
================================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
================================================================================

Snappy Compression
------------------
Copyright 2011, Google Inc.
All rights reserved.Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:
* Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.
* Redistributions in binary form must reproduce the above
  copyright notice, this list of conditions and the following disclaimer
  in the documentation and/or other materials provided with the distribution.
* Neither the name of Google Inc. nor the names of its contributors may be used
  to endorse or promote products derived from this software without specific prior
  written permission.
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
```

```
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

===Some of the benchmark data in testdata/ is licensed differently:
- fireworks.jpeg is Copyright 2013 Steinar H. Gunderson, and
  is licensed under the Creative Commons Attribution 3.0 license
  (CC-BY-3.0). See https://creativecommons.org/licenses/by/3.0/
  for more information.
 - kppkn.gtb is taken from the Gaviota chess tablebase set, and is
   licensed under the MIT License.
   See https://sites.google.com/site/gaviotachessengine/Home/endgame-tablebases-1
   for more information. - paper-100k.pdf is an excerpt (bytes 92160 to 194560)
   from the paper “Combinatorial Modeling of Chromatin Features Quantitatively
   Predicts DNA Replication Timing in _Drosophila_” by Federico Comoglio and
   Renato Paro, which is licensed under the CC-BY license.
   See http://www.ploscompbiol.org/static/license
   for more ifnormation.
- alice29.txt, asyoulik.txt, plrabn12.txt and lcet10.txt are from Project
  Gutenberg. The first three have expired copyrights and are in the public
  domain; the latter does not have expired copyright, but is still in the
  public domain according to the license information
  (http://www.gutenberg.org/ebooks/53).
==============================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
==============================================================================

unRAR
-----
unRAR 7.0.9
===========
******    *****   ******   UnRAR - free utility for RAR archives
**   **  **   **  **   **  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
******   *******  ******    License for use and distribution of
**   **  **   **  **   **   ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
**   **  **   **  **   **         FREE portable version
                                  ~~~~~~~~~~~~~~~~~~~~

    The source code of UnRAR utility is freeware. This means:

1. All copyrights to RAR and the utility UnRAR are exclusively
   owned by the author - Alexander Roshal.

2. UnRAR source code may be used in any software to handle
   RAR archives without limitations free of charge, but cannot be
   used to develop RAR (WinRAR) compatible archiver and to
   re-create RAR compression algorithm, which is proprietary.
   Distribution of modified UnRAR source code in separate form
   or as a part of other software is permitted, provided that
   full text of this paragraph, starting from "UnRAR source code"
   words, is included in license, or in documentation if license
   is not available, and in source code comments of resulting package.

3. The UnRAR utility may be freely distributed. It is allowed
   to distribute UnRAR inside of other software packages.

4. THE RAR ARCHIVER AND THE UnRAR UTILITY ARE DISTRIBUTED "AS IS".
   NO WARRANTY OF ANY KIND IS EXPRESSED OR IMPLIED.  YOU USE AT
   YOUR OWN RISK. THE AUTHOR WILL NOT BE LIABLE FOR DATA LOSS,
   DAMAGES, LOSS OF PROFITS OR ANY OTHER KIND OF LOSS WHILE USING
   OR MISUSING THIS SOFTWARE.

5. Installing and using the UnRAR utility signifies acceptance of
   these terms and conditions of the license.

6. If you don't agree with terms of the license you must remove
   UnRAR files from your storage devices and cease to use the
   utility.
```

```
================================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
================================================================================

XML Security for Java
---------------------
Copyright: The Apache Software Foundation
=== Source URL: https://dlcdn.apache.org/santuario/java-library/3_0_5/xmlsec-3.0.5-source-release.zip
License: Apache 2.0

./LICENSE

                 Apache License
           Version 2.0, January 2004
        http://www.apache.org/licenses/

A copy of the Apache License v2.0, January 2004 license can be found
in the 'Standard Licenses' section

./NOTICE
Apache Santuario - XML Security for Java
Copyright 1999-2024 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (http://www.apache.org/).

It was originally based on software copyright (c) 2001, Institute for
Data Communications Systems, http://www.nue.et-inf.uni-siegen.de/.

The development of this software was partly funded by the European
Commission in the <WebSig> project in the ISIS Programme.

This product contains software that is
copyright (c) 2021, 2023, Oracle and/or its affiliates.


4th party as listed in the DEPENDENCIES file
--------------------------------------------
From: 'Eclipse Foundation' (https://www.eclipse.org)

- Jakarta XML Binding API (=== Source URL:https://github.com/jakartaee/jaxb-api/tree/3.0.1)
jakarta.xml.bind:jakarta.xml.bind-api:jar:3.0.1
  License: Eclipse Distribution License - v 1.0 (http://www.eclipse.org/org/documents/edl-v10.php)
  ./LICENSE.md
  Copyright (c) 2017, 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in the
  documentation and/or other materials provided with the distribution.

- Neither the name of the Eclipse Foundation, Inc. nor the names of its
  contributors may be used to endorse or promote products derived
  from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
```

```
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----------------------------------------------------------

./NOTICE.md

Notices for Jakarta XML Binding
This content is produced and maintained by the Jakarta XML Binding project.

Project home: https://projects.eclipse.org/projects/ee4j.jaxb
Trademarks
Jakarta XML Binding is a trademark of the Eclipse Foundation.

Copyright
All content is the property of the respective authors or their employers.
For more information regarding authorship of content, please consult the
listed source code repository logs.

Declared Project Licenses
This program and the accompanying materials are made available under the
terms of the Eclipse Distribution License v. 1.0 which is available at
http://www.eclipse.org/org/documents/edl-v10.php.

SPDX-License-Identifier: BSD-3-Clause

Source Code
The project maintains the following source code repositories:

https://github.com/eclipse-ee4j/jaxb-api
https://github.com/eclipse-ee4j/jaxb-tck
Third-party Content
This project leverages the following third party content.

Apache River (3.0.0)

License: Apache-2.0 AND BSD-3-Clause
ASM 7 (n/a)

License: BSD-3-Clause
Project: https://asm.ow2.io/
Source: https://repository.ow2.org/nexus/#nexus-search;
gav~org.ow2.asm~asm-commons~~~~kw,versionexpand
JTHarness (5.0)

License: (GPL-2.0 OR GPL-2.0 WITH Classpath-exception-2.0)
Project: https://wiki.openjdk.java.net/display/CodeTools/JT+Harness
Source: http://hg.openjdk.java.net/code-tools/jtharness/
normalize.css (3.0.2)

License: MIT
SigTest (n/a)

License: GPL-2.0 OR GPL-2.0 WITH Classpath-exception-2.0
Cryptography
Content may contain encryption software. The country in which you are currently
may have restrictions on the import, possession, and use, and/or re-export to
another country, of encryption software. BEFORE using any encryption software,
please check the country's laws, regulations and policies concerning the import,
possession, or use, and re-export of encryption software, to see if this is permitted.

----------------------------------------------------------

5th Dependency: com.sun.activation:jakarta.activation
```

```
(Source URL: https://github.com/jakartaee/jaf-api/tree/2.0.1)
Copyright: Eclipse Foundation

./LICENSE.md

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

- Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

- Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in the
  documentation and/or other materials provided with the distribution.

- Neither the name of the Eclipse Foundation, Inc. nor the names of its
  contributors may be used to endorse or promote products derived
  from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-------------------------------------------------------

./NOTICE.md
Notices for Jakarta Activation
This content is produced and maintained by Jakarta Activation project.

Project home: https://projects.eclipse.org/projects/ee4j.jaf
Copyright
All content is the property of the respective authors or their employers.
For more information regarding authorship of content, please consult the
listed source code repository logs.

Declared Project Licenses
This program and the accompanying materials are made available under the terms of
the Eclipse Distribution License v. 1.0, which is available
at http://www.eclipse.org/org/documents/edl-v10.php.

SPDX-License-Identifier: BSD-3-Clause

Source Code
The project maintains the following source code repositories:

https://github.com/eclipse-ee4j/jaf

-------------------------------------------------------

From: 'FasterXML' (http://fasterxml.com)

- Woodstox (https://github.com/FasterXML/woodstox/tree/woodstox-core-6.5.1)
com.fasterxml.woodstox:woodstox-core:bundle:6.5.1
  License: The Apache License, Version 2.0  (http://www.apache.org/licenses/LICENSE-2.0.txt)

./LICENSE
```

```
Apache 2.0 ( same as org.apache.santuario:xmlsec)

-------------------------------------------------------

From: 'fasterxml.com' (http://fasterxml.com)

- Stax2 API (https://github.com/FasterXML/stax2-api/tree/stax2-api-4.2.1)
org.codehaus.woodstox:stax2-api:bundle:4.2.1
  License: The BSD License (http://www.opensource.org/licenses/bsd-license.php)

./src/main/resources/META-INF/LICENSE

This copy of Stax2 API is licensed under the
Simplified BSD License (also known as "2-clause BSD", or "FreeBSD License")
See the License for details about distribution rights, and the
specific rights regarding derivate works.

You may obtain a copy of the License at:

http://www.opensource.org/licenses/bsd-license.php

with details of:

<COPYRIGHT HOLDER> = FasterXML.com
<YEAR> = 2010-

-------------------------------------------------------

From: 'QOS.ch' (http://www.qos.ch)

- SLF4J API Module (https://github.com/qos-ch/slf4j/tree/v_1.7.36/slf4j-api)
org.slf4j:slf4j-api:jar:1.7.36
  License: MIT License (http://www.opensource.org/licenses/mit-license.php)

./slf4j/slf4j-api/LICENSE.txt

Copyright (c) 2004-2022 QOS.ch Sarl (Switzerland)
All rights reserved.

Permission is hereby granted, free  of charge, to any person obtaining
a  copy  of this  software  and  associated  documentation files  (the
"Software"), to  deal in  the Software without  restriction, including
without limitation  the rights to  use, copy, modify,  merge, publish,
distribute,  sublicense, and/or sell  copies of  the Software,  and to
permit persons to whom the Software  is furnished to do so, subject to
the following conditions:

The  above  copyright  notice  and  this permission  notice  shall  be
included in all copies or substantial portions of the Software.

THE  SOFTWARE IS  PROVIDED  "AS  IS", WITHOUT  WARRANTY  OF ANY  KIND,
EXPRESS OR  IMPLIED, INCLUDING  BUT NOT LIMITED  TO THE  WARRANTIES OF
MERCHANTABILITY,    FITNESS    FOR    A   PARTICULAR    PURPOSE    AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE,  ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-------------------------------------------------------

From: 'The Apache Software Foundation' (https://www.apache.org/)

- Apache Commons Codec (https://github.com/apache/commons-codec/tree/rel/commons-codec-1.15)
commons-codec:commons-codec:jar:1.15
  License: Apache License, Version 2.0 (https://www.apache.org/licenses/LICENSE-2.0.txt)
```

```
./LICENSE.txt

Apache 2.0 ( same as org.apache.santuario:xmlsec)

-------------------------------------------------------

./NOTICE.txt
Apache Commons Codec
Copyright 2002-2020 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (https://www.apache.org/).

src/test/org/apache/commons/codec/language/DoubleMetaphoneTest.java
contains test data from http://aspell.net/test/orig/batch0.tab.
Copyright (C) 2002 Kevin Atkinson (kevina@gnu.org)

The content of package org.apache.commons.codec.language.bm has been translated
from the original php source code available at http://stevemorse.org/phoneticinfo.htm
with permission from the original authors.
Original source copyright:
Copyright (c) 2008 Alexander Beider & Stephen P. Morse.
=============================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
=============================================================================

Zlib Data Compression
---------------------
Copyright notice: (C) 1995-2024 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied
warranty.  In no event will the authors be held liable for any damages
arising from the use of this software.
Permission is granted to anyone to use this software for any purpose,
including commercial applications, and to alter it and redistribute it
freely, subject to the following restrictions:
1. The origin of this software must not be misrepresented; you must not
   claim that you wrote the original software. If you use this software
   in a product, an acknowledgment in the product documentation would be
   appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be
   misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

  Jean-loup Gailly        Mark Adler
  jloup@gzip.org          madler@alumni.caltech.edu
=============================================================================
===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===   ===
=============================================================================
```

Standard Licenses

Apache License v2.0, January 2004

```
The following applies to all products licensed under the Apache 2.0
License: You may not use the identified files except in compliance
with the Apache License, Version 2.0 (the "License.") You may obtain a
copy of the License at http://www.apache.org/licenses/LICENSE-2.0. A
copy of the license is also reproduced below. Unless required by
applicable law or agreed to in writing, software distributed under the
License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR
CONDITIONS OF ANY KIND, either express or implied. See the License for
the specific language governing permissions and limitations under the
License.
```

```
Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the
copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other
entities that control, are controlled by, or are under common control
with that entity. For the purposes of this definition, "control" means
(i) the power, direct or indirect, to cause the direction or
management of such entity, whether by contract or otherwise, or (ii)
ownership of fifty percent (50%) or more of the outstanding shares, or
(iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising
permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,
including but not limited to software source code, documentation
source, and configuration files.

"Object" form shall mean any form resulting from mechanical
transformation or translation of a Source form, including but not
limited to compiled object code, generated documentation, and
conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object
form, made available under the License, as indicated by a copyright
notice that is included in or attached to the work (an example is
provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object
form, that is based on (or derived from) the Work and for which the
editorial revisions, annotations, elaborations, or other modifications
represent, as a whole, an original work of authorship. For the
purposes of this License, Derivative Works shall not include works
that remain separable from, or merely link (or bind by name) to the
interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the
original version of the Work and any modifications or additions to
that Work or Derivative Works thereof, that is intentionally submitted
to Licensor for inclusion in the Work by the copyright owner or by an
individual or Legal Entity authorized to submit on behalf of the
copyright owner. For the purposes of this definition, "submitted"
means any form of electronic, verbal, or written communication sent to
the Licensor or its representatives, including but not limited to
communication on electronic mailing lists, source code control
systems, and issue tracking systems that are managed by, or on behalf
of, the Licensor for the purpose of discussing and improving the Work,
but excluding communication that is conspicuously marked or otherwise
designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity
on behalf of whom a Contribution has been received by Licensor and
subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of
this License, each Contributor hereby grants to You a perpetual,
worldwide, non-exclusive, no-charge, royalty-free, irrevocable
copyright license to reproduce, prepare Derivative Works of, publicly
```

```
display, publicly perform, sublicense, and distribute the Work and
such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of
this License, each Contributor hereby grants to You a perpetual,
worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except
as stated in this section) patent license to make, have made, use,
offer to sell, sell, import, and otherwise transfer the Work, where
such license applies only to those patent claims licensable by such
Contributor that are necessarily infringed by their Contribution(s)
alone or by combination of their Contribution(s) with the Work to
which such Contribution(s) was submitted. If You institute patent
litigation against any entity (including a cross-claim or counterclaim
in a lawsuit) alleging that the Work or a Contribution incorporated
within the Work constitutes direct or contributory patent
infringement, then any patent licenses granted to You under this
License for that Work shall terminate as of the date such litigation
is filed.

4. Redistribution. You may reproduce and distribute copies of the Work
or Derivative Works thereof in any medium, with or without
modifications, and in Source or Object form, provided that You meet
the following conditions:

(a) You must give any other recipients of the Work or Derivative Works
a copy of this License; and

(b) You must cause any modified files to carry prominent notices
stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that
You distribute, all copyright, patent, trademark, and attribution
notices from the Source form of the Work, excluding those notices that
do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its
distribution, then any Derivative Works that You distribute must
include a readable copy of the attribution notices contained

within such NOTICE file, excluding those notices that do not pertain
to any part of the Derivative Works, in at least one of the following
places: within a NOTICE text file distributed as part of the
Derivative Works; within the Source form or documentation, if provided
along with the Derivative Works; or, within a display generated by the
Derivative Works, if and wherever such third-party notices normally
appear. The contents of the NOTICE file are for informational purposes
only and do not modify the License. You may add Your own attribution
notices within Derivative Works that You distribute, alongside or as
an addendum to the NOTICE text from the Work, provided that such
additional attribution notices cannot be construed as modifying the
License.

You may add Your own copyright statement to Your modifications and may
provide additional or different license terms and conditions for use,
reproduction, or distribution of Your modifications, or for any such
Derivative Works as a whole, provided Your use, reproduction, and
distribution of the Work otherwise complies with the conditions stated
in this License.

5. Submission of Contributions. Unless You explicitly state otherwise,
any Contribution intentionally submitted for inclusion in the Work by
You to the Licensor shall be under the terms and conditions of this
License, without any additional terms or conditions.  Notwithstanding
the above, nothing herein shall supersede or modify the terms of any
separate license agreement you may have executed with Licensor
regarding such Contributions.
```

```
6. Trademarks. This License does not grant permission to use the trade
names, trademarks, service marks, or product names of the Licensor,
except as required for reasonable and customary use in describing the
origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed
to in writing, Licensor provides the Work (and each Contributor
provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR
CONDITIONS OF ANY KIND, either express or implied, including, without
limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT,
MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely
responsible for determining the appropriateness of using or
redistributing the Work and assume any risks associated with Your
exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,
whether in tort (including negligence), contract, or otherwise, unless
required by applicable law (such as deliberate and grossly negligent
acts) or agreed to in writing, shall any Contributor be liable to You
for damages, including any direct, indirect, special, incidental, or
consequential damages of any character arising as a result of this
License or out of the use or inability to use the Work (including but
not limited to damages for loss of goodwill, work stoppage, computer
failure or malfunction, or any and all other commercial damages or
losses), even if such Contributor has been advised of the possibility
of such damages.

9. Accepting Warranty or Additional Liability. While redistributing
the Work or Derivative Works thereof, You may choose to offer, and
charge a fee for, acceptance of support, warranty, indemnity, or other
liability obligations and/or rights consistent with this
License. However, in accepting such obligations, You may act only on
Your own behalf and on Your sole responsibility, not on behalf of any
other Contributor, and only if You agree to indemnify, defend, and
hold each Contributor harmless for any liability incurred by, or
claims asserted against, such Contributor by reason of your accepting
any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate
notice, with the fields enclosed by brackets "[]" replaced with your own
identifying information. (Don't include the brackets!) The text should be
enclosed in the appropriate comment syntax for the file format. We also
recommend that a file or class name and description of purpose be included
on the same "printed page" as the copyright notice for easier identification
within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied. See the License for the specific language governing permissions
and limitations under the License.
```

==========
==========

Mozilla Public License 2.0

```
                         MOZILLA PUBLIC LICENSE
                               Version 2.0
                             ---------------
1. Definitions
--------------

1.1. "Contributor"
    means each individual or legal entity that creates, contributes to
    the creation of, or owns Covered Software.

1.2. "Contributor Version"
    means the combination of the Contributions of others (if any) used
    by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"
    means Covered Software of a particular Contributor.

1.4. "Covered Software"
    means Source Code Form to which the initial Contributor has attached
    the notice in Exhibit A, the Executable Form of such Source Code
    Form, and Modifications of such Source Code Form, in each case
    including portions thereof.

1.5. "Incompatible With Secondary Licenses"
    means

    (a) that the initial Contributor has attached the notice described
        in Exhibit B to the Covered Software; or

    (b) that the Covered Software was made available under the terms of
        version 1.1 or earlier of the License, but not also under the
        terms of a Secondary License.

1.6. "Executable Form"
    means any form of the work other than Source Code Form.

1.7. "Larger Work"
    means a work that combines Covered Software with other material, in
    a separate file or files, that is not Covered Software.

1.8. "License"
    means this document.

1.9. "Licensable"
    means having the right to grant, to the maximum extent possible,
    whether at the time of the initial grant or subsequently, any and
    all of the rights conveyed by this License.

1.10. "Modifications"
    means any of the following:

    (a) any file in Source Code Form that results from an addition to,
        deletion from, or modification of the contents of Covered
        Software; or

    (b) any new file in Source Code Form that contains any Covered
        Software.

1.11. "Patent Claims" of a Contributor
    means any patent claim(s), including without limitation, method,
    process, and apparatus claims, in any patent Licensable by such
    Contributor that would be infringed, but for the grant of the
    License, by the making, using, selling, offering for sale, having
    made, import, or transfer of either its Contributions or its
```

```
    Contributor Version.

1.12. "Secondary License"
    means either the GNU General Public License, Version 2.0, the GNU
    Lesser General Public License, Version 2.1, the GNU Affero General
    Public License, Version 3.0, or any later versions of those
    licenses.

1.13. "Source Code Form"
    means the form of the work preferred for making modifications.

1.14. "You" (or "Your")
    means an individual or a legal entity exercising rights under this
    License. For legal entities, "You" includes any entity that
    controls, is controlled by, or is under common control with You. For
    purposes of this definition, "control" means (a) the power, direct
    or indirect, to cause the direction or management of such entity,
    whether by contract or otherwise, or (b) ownership of more than
    fifty percent (50%) of the outstanding shares or beneficial
    ownership of such entity.

2. License Grants and Conditions
--------------------------------

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free,
non-exclusive license:

(a) under intellectual property rights (other than patent or trademark)
    Licensable by such Contributor to use, reproduce, make available,
    modify, display, perform, distribute, and otherwise exploit its
    Contributions, either on an unmodified basis, with Modifications, or
    as part of a Larger Work; and

(b) under Patent Claims of such Contributor to make, use, sell, offer
    for sale, have made, import, and otherwise transfer either its
    Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution
become effective for each Contribution on the date the Contributor first
distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under
this License. No additional rights or licenses will be implied from the
distribution or licensing of Covered Software under this License.
Notwithstanding Section 2.1(b) above, no patent license is granted by a
Contributor:

(a) for any code that a Contributor has removed from Covered Software;
    or

(b) for infringements caused by: (i) Your and any other third party's
    modifications of Covered Software, or (ii) the combination of its
    Contributions with other software (except as part of its Contributor
    Version); or

(c) under Patent Claims infringed by Covered Software in the absence of
    its Contributions.

This License does not grant any rights in the trademarks, service marks,
or logos of any Contributor (except as may be necessary to comply with
the notice requirements in Section 3.4).
```

```
2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to
distribute the Covered Software under a subsequent version of this
License (see Section 10.2) or under the terms of a Secondary License (if
permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its
Contributions are its original creation(s) or it has sufficient rights
to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under
applicable copyright doctrines of fair use, fair dealing, or other
equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted
in Section 2.1.

3. Responsibilities
-------------------

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any
Modifications that You create or to which You contribute, must be under
the terms of this License. You must inform recipients that the Source
Code Form of the Covered Software is governed by the terms of this
License, and how they can obtain a copy of this License. You may not
attempt to alter or restrict the recipients' rights in the Source Code
Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

(a) such Covered Software must also be made available in Source Code
    Form, as described in Section 3.1, and You must inform recipients of
    the Executable Form how they can obtain a copy of such Source Code
    Form by reasonable means in a timely manner, at a charge no more
    than the cost of distribution to the recipient; and

(b) You may distribute such Executable Form under the terms of this
    License, or sublicense it under different terms, provided that the
    license for the Executable Form does not attempt to limit or alter
    the recipients' rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice,
provided that You also comply with the requirements of this License for
the Covered Software. If the Larger Work is a combination of Covered
Software with a work governed by one or more Secondary Licenses, and the
Covered Software is not Incompatible With Secondary Licenses, this
License permits You to additionally distribute such Covered Software
under the terms of such Secondary License(s), so that the recipient of
the Larger Work may, at their option, further distribute the Covered
Software under the terms of either this License or such Secondary
License(s).

3.4. Notices
```

```
You may not remove or alter the substance of any license notices
(including copyright notices, patent notices, disclaimers of warranty,
or limitations of liability) contained within the Source Code Form of
the Covered Software, except that You may alter any license notices to
the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support,
indemnity or liability obligations to one or more recipients of Covered
Software. However, You may do so only on Your own behalf, and not on
behalf of any Contributor. You must make it absolutely clear that any
such warranty, support, indemnity, or liability obligation is offered by
You alone, and You hereby agree to indemnify every Contributor for any
liability incurred by such Contributor as a result of warranty, support,
indemnity or liability terms You offer. You may include additional
disclaimers of warranty and limitations of liability specific to any
jurisdiction.

4. Inability to Comply Due to Statute or Regulation
---------------------------------------------------

If it is impossible for You to comply with any of the terms of this
License with respect to some or all of the Covered Software due to
statute, judicial order, or regulation then You must: (a) comply with
the terms of this License to the maximum extent possible; and (b)
describe the limitations and the code they affect. Such description must
be placed in a text file included with all distributions of the Covered
Software under this License. Except to the extent prohibited by statute
or regulation, such description must be sufficiently detailed for a
recipient of ordinary skill to be able to understand it.

5. Termination
--------------

5.1. The rights granted under this License will terminate automatically
if You fail to comply with any of its terms. However, if You become
compliant, then the rights granted under this License from a particular
Contributor are reinstated (a) provisionally, unless and until such
Contributor explicitly and finally terminates Your grants, and (b) on an
ongoing basis, if such Contributor fails to notify You of the
non-compliance by some reasonable means prior to 60 days after You have
come back into compliance. Moreover, Your grants from a particular
Contributor are reinstated on an ongoing basis if such Contributor
notifies You of the non-compliance by some reasonable means, this is the
first time You have received notice of non-compliance with this License
from such Contributor, and You become compliant prior to 30 days after
Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent
infringement claim (excluding declaratory judgment actions,
counter-claims, and cross-claims) alleging that a Contributor Version
directly or indirectly infringes any patent, then the rights granted to
You by any and all Contributors for the Covered Software under Section
2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all
end user license agreements (excluding distributors and resellers) which
have been validly granted by You or Your distributors under this License
prior to termination shall survive termination.

************************************************************************
*                                                                      *
*  6. Disclaimer of Warranty                                           *
*  -------------------------                                           *
*                                                                      *
```

```
*  Covered Software is provided under this License on an "as is"       *
*  basis, without warranty of any kind, either expressed, implied, or  *
*  statutory, including, without limitation, warranties that the       *
*  Covered Software is free of defects, merchantable, fit for a        *
*  particular purpose or non-infringing. The entire risk as to the     *
*  quality and performance of the Covered Software is with You.        *
*  Should any Covered Software prove defective in any respect, You     *
*  (not any Contributor) assume the cost of any necessary servicing,   *
*  repair, or correction. This disclaimer of warranty constitutes an   *
*  essential part of this License. No use of any Covered Software is   *
*  authorized under this License except under this disclaimer.         *
*                                                                      *
************************************************************************

************************************************************************
*                                                                      *
*  7. Limitation of Liability                                          *
*  --------------------------                                          *
*                                                                      *
*  Under no circumstances and under no legal theory, whether tort      *
*  (including negligence), contract, or otherwise, shall any           *
*  Contributor, or anyone who distributes Covered Software as          *
*  permitted above, be liable to You for any direct, indirect,         *
*  special, incidental, or consequential damages of any character      *
*  including, without limitation, damages for lost profits, loss of    *
*  goodwill, work stoppage, computer failure or malfunction, or any    *
*  and all other commercial damages or losses, even if such party      *
*  shall have been informed of the possibility of such damages. This   *
*  limitation of liability shall not apply to liability for death or   *
*  personal injury resulting from such party's negligence to the       *
*  extent applicable law prohibits such limitation. Some               *
*  jurisdictions do not allow the exclusion or limitation of           *
*  incidental or consequential damages, so this exclusion and          *
*  limitation may not apply to You.                                    *
*                                                                      *
************************************************************************

8. Litigation
-------------

Any litigation relating to this License may be brought only in the
courts of a jurisdiction where the defendant maintains its principal
place of business and such litigation shall be governed by laws of that
jurisdiction, without reference to its conflict-of-law provisions.
Nothing in this Section shall prevent a party's ability to bring
cross-claims or counter-claims.

9. Miscellaneous
----------------

This License represents the complete agreement concerning the subject
matter hereof. If any provision of this License is held to be
unenforceable, such provision shall be reformed only to the extent
necessary to make it enforceable. Any law or regulation which provides
that the language of a contract shall be construed against the drafter
shall not be used to construe this License against a Contributor.

10. Versions of the License
---------------------------

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section
10.3, no one other than the license steward has the right to modify or
publish new versions of this License. Each version will be given a
distinguishing version number.
```

```
10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version
of the License under which You originally received the Covered Software,
or under the terms of any subsequent version published by the license
steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to
create a new license for such software, you may create and use a
modified version of this License if you rename the license and remove
any references to the name of the license steward (except to note that
such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary
Licenses

If You choose to distribute Source Code Form that is Incompatible With
Secondary Licenses under the terms of this version of the License, the
notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice
-------------------------------------------

  This Source Code Form is subject to the terms of the Mozilla Public
  License, v. 2.0. If a copy of the MPL was not distributed with this
  file, You can obtain one at https://mozilla.org/MPL/2.0/.

If it is not possible or desirable to put the notice in a particular
file, then You may include the notice in a location (such as a LICENSE
file in a relevant directory) where a recipient would be likely to look
for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice
---------------------------------------------------------

  This Source Code Form is "Incompatible With Secondary Licenses", as
  defined by the Mozilla Public License, v. 2.0.
```

```
================================================================================
================================================================================
```

Python Software Foundation license, version 2

```
A. HISTORY OF THE SOFTWARE
==========================
Python was created in the early 1990s by Guido van Rossum at Stichting
Mathematisch Centrum (CWI, see http://www.cwi.nl) in the Netherlands
as a successor of a language called ABC.  Guido remains Python's
principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for
National Research Initiatives (CNRI, see http://www.cnri.reston.va.us)
in Reston, Virginia where he released several versions of the
software.

In May 2000, Guido and the Python core development team moved to
BeOpen.com to form the BeOpen PythonLabs team.  In October of the same
year, the PythonLabs team moved to Digital Creations, which became
Zope Corporation.  In 2001, the Python Software Foundation (PSF, see
https://www.python.org/psf/) was formed, a non-profit organization
created specifically to own Python-related Intellectual Property.
```

```
Zope Corporation was a sponsoring member of the PSF.

All Python releases are Open Source (see http://www.opensource.org for
the Open Source Definition).  Historically, most, but not all, Python
releases have also been GPL-compatible; the table below summarizes
the various releases.

    Release         Derived     Year        Owner       GPL-
                    from                                compatible? (1)

    0.9.0 thru 1.2              1991-1995   CWI         yes
    1.3 thru 1.5.2  1.2         1995-1999   CNRI        yes
    1.6             1.5.2       2000        CNRI        no
    2.0             1.6         2000        BeOpen.com  no
    1.6.1           1.6         2001        CNRI        yes (2)
    2.1             2.0+1.6.1   2001        PSF         no
    2.0.1           2.0+1.6.1   2001        PSF         yes
    2.1.1           2.1+2.0.1   2001        PSF         yes
    2.1.2           2.1.1       2002        PSF         yes
    2.1.3           2.1.2       2002        PSF         yes
    2.2 and above   2.1.1       2001-now    PSF         yes

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under
    the GPL.  All Python licenses, unlike the GPL, let you distribute
    a modified version without making your changes open source.  The
    GPL-compatible licenses make it possible to combine Python with
    other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible,
    because its license has a choice of law clause.  According to
    CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1
    is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's
direction to make these releases possible.

B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON
===============================================================
PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2
--------------------------------------------
1. This LICENSE AGREEMENT is between the Python Software Foundation
("PSF"), and the Individual or Organization ("Licensee") accessing and
otherwise using this software ("Python") in source or binary form and
its associated documentation.
2. Subject to the terms and conditions of this License Agreement, PSF hereby
grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce,
analyze, test, perform and/or display publicly, prepare derivative works,
distribute, and otherwise use Python alone or in any derivative version,
provided, however, that PSF's License Agreement and PSF's notice of copyright,
i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010,
2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019 Python Software Foundation;
All Rights Reserved" are retained in Python alone or in any derivative version
prepared by Licensee.
3. In the event Licensee prepares a derivative work that is based on
or incorporates Python or any part thereof, and wants to make
the derivative work available to others as provided herein, then
Licensee hereby agrees to include in any such work a brief summary of
the changes made to Python.
4. PSF is making Python available to Licensee on an "AS IS"
basis.  PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND
DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT
INFRINGE ANY THIRD PARTY RIGHTS.
5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON
```

```
FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS
A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON,
OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material
breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any
relationship of agency, partnership, or joint venture between PSF and
Licensee.  This License Agreement does not grant permission to use PSF
trademarks or trade name in a trademark sense to endorse or promote
products or services of Licensee, or any third party.
8. By copying, installing or otherwise using Python, Licensee
agrees to be bound by the terms and conditions of this License
Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0
----------------------------------------
BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1
1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an
office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the
Individual or Organization ("Licensee") accessing and otherwise using
this software in source or binary form and its associated
documentation ("the Software").
2. Subject to the terms and conditions of this BeOpen Python License
Agreement, BeOpen hereby grants Licensee a non-exclusive,
royalty-free, world-wide license to reproduce, analyze, test, perform
and/or display publicly, prepare derivative works, distribute, and
otherwise use the Software alone or in any derivative version,
provided, however, that the BeOpen Python License is retained in the
Software, alone or in any derivative version prepared by Licensee.
3. BeOpen is making the Software available to Licensee on an "AS IS"
basis.  BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND
DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT
INFRINGE ANY THIRD PARTY RIGHTS.
4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE
SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS
AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY
DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
5. This License Agreement will automatically terminate upon a material
breach of its terms and conditions.
6. This License Agreement shall be governed by and interpreted in all
respects by the law of the State of California, excluding conflict of
law provisions.  Nothing in this License Agreement shall be deemed to
create any relationship of agency, partnership, or joint venture
between BeOpen and Licensee.  This License Agreement does not grant
permission to use BeOpen trademarks or trade names in a trademark
sense to endorse or promote products or services of Licensee, or any
third party.  As an exception, the "BeOpen Python" logos available at
http://www.pythonlabs.com/logos.html may be used according to the
permissions granted on that web page.
7. By copying, installing or otherwise using the software, Licensee
agrees to be bound by the terms and conditions of this License
Agreement.

CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1
---------------------------------------
1. This LICENSE AGREEMENT is between the Corporation for National
Research Initiatives, having an office at 1895 Preston White Drive,
Reston, VA 20191 ("CNRI"), and the Individual or Organization
("Licensee") accessing and otherwise using Python 1.6.1 software in
source or binary form and its associated documentation.
2. Subject to the terms and conditions of this License Agreement, CNRI
hereby grants Licensee a nonexclusive, royalty-free, world-wide
license to reproduce, analyze, test, perform and/or display publicly,
prepare derivative works, distribute, and otherwise use Python 1.6.1
alone or in any derivative version, provided, however, that CNRI's
```

```
License Agreement and CNRI's notice of copyright, i.e., "Copyright (c)
1995-2001 Corporation for National Research Initiatives; All Rights
Reserved" are retained in Python 1.6.1 alone or in any derivative
version prepared by Licensee.  Alternately, in lieu of CNRI's License
Agreement, Licensee may substitute the following text (omitting the
quotes): "Python 1.6.1 is made available subject to the terms and
conditions in CNRI's License Agreement.  This Agreement together with
Python 1.6.1 may be located on the Internet using the following
unique, persistent identifier (known as a handle): 1895.22/1013.  This
Agreement may also be obtained from a proxy server on the Internet
using the following URL: http://hdl.handle.net/1895.22/1013".
3. In the event Licensee prepares a derivative work that is based on
or incorporates Python 1.6.1 or any part thereof, and wants to make
the derivative work available to others as provided herein, then
Licensee hereby agrees to include in any such work a brief summary of
the changes made to Python 1.6.1.
4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS"
basis.  CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR
IMPLIED.  BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND
DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS
FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT
INFRINGE ANY THIRD PARTY RIGHTS.
5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON
1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS
A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1,
OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material
breach of its terms and conditions.
7. This License Agreement shall be governed by the federal
intellectual property law of the United States, including without
limitation the federal copyright law, and, to the extent such
U.S. federal law does not apply, by the law of the Commonwealth of
Virginia, excluding Virginia's conflict of law provisions.
Notwithstanding the foregoing, with regard to derivative works based
on Python 1.6.1 that incorporate non-separable material that was
previously distributed under the GNU General Public License (GPL), the
law of the Commonwealth of Virginia shall govern this License
Agreement only as to issues arising under or with respect to
Paragraphs 4, 5, and 7 of this License Agreement.  Nothing in this
License Agreement shall be deemed to create any relationship of
agency, partnership, or joint venture between CNRI and Licensee.  This
License Agreement does not grant permission to use CNRI trademarks or
trade name in a trademark sense to endorse or promote products or
services of Licensee, or any third party.
8. By clicking on the "ACCEPT" button where indicated, or by copying,
installing or otherwise using Python 1.6.1, Licensee agrees to be
bound by the terms and conditions of this License Agreement.

        ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2
--------------------------------------------------
Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam,
The Netherlands.  All rights reserved.
Permission to use, copy, modify, and distribute this software and its
documentation for any purpose and without fee is hereby granted,
provided that the above copyright notice appear in all copies and that
both that copyright notice and this permission notice appear in
supporting documentation, and that the name of Stichting Mathematisch
Centrum or CWI not be used in advertising or publicity pertaining to
distribution of the software without specific, written prior
permission.
STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO
THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND
FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE
FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
```

```
ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT
OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
```

GNU Lesser General Public License v2.1, February 1999

```
The following applies to all products licensed under the
GNU Lesser General Public License, Version 2.1: You may
not use the identified files except in compliance with
the GNU Lesser General Public License, Version 2.1 (the
"License"). You may obtain a copy of the License at
http://www.gnu.org/licenses/lgpl-2.1.html. A copy of the
license is also reproduced below. Unless required by
applicable law or agreed to in writing, software distributed
under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express
or implied. See the License for the specific language governing
permissions and limitations under the License.

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.
```

```
  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library.  Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.

  Finally, software patents pose a constant threat to the existence of
any free program.  We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder.  Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License.  This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License.  We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library.  The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom.  The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License.  It also provides other free software developers Less
of an advantage over competing non-free programs.  These disadvantages
are the reason we use the ordinary General Public License for many
libraries.  However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it
becomes a de-facto standard.  To achieve this, non-free programs
must be allowed to use the library.  A more frequent case is that
a free library does the same job as widely used non-free libraries.
In this case, there is little to gain by limiting the free library
to free software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software.  For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow.  Pay close attention to the difference between a
"work based on the library" and a "work that uses the library".  The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.
```

```
                GNU LESSER GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or
other authorized party saying it may be distributed under the terms of
this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms.  A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language.  (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it.  For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control
compilation and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it).  Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
```

```
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application.  Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library.  To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License.  (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.)  Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library".  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
```

```
contains portions of the Library), rather than a "work that uses the
library".  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library.  The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work.  (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License.  You must supply a copy of this License.  If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License.  Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library.  (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library.  A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.
```

```
    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it.  However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system.  Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.

  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
    facilities.  This must be distributed under the terms of the
    Sections above.

    b) Give prominent notice with the combined library of the fact
    that part of it is a work based on the Library, and explaining
    where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License.  Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License.  However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Library or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties with
this License.

  11. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all.  For example, if a patent
```

```
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended
to apply, and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices.  Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded.  In such case, this License incorporates
the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number.  If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation.  If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission.  For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this.  Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

                            NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU.  SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
```

```
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

                     END OF TERMS AND CONDITIONS

           How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms
of the ordinary General Public License).

  To apply these terms, attach the following notices to the library.
It is safest to attach them to the start of each source file to most
effectively convey the exclusion of warranty; and each file should
have at least the "copyright" line and a pointer to where the full
notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA
    02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James
  Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
```

==========
==========

GNU General Public License, v3.0 with GCC Runtime library exception

```
GCC RUNTIME LIBRARY EXCEPTION
```

```
Version 3.1, 31 March 2009

Copyright (C) 2009 Free Software Foundation, Inc. <http://fsf.org/>

Everyone is permitted to copy and distribute verbatim copies of this
license document, but changing it is not allowed.

This GCC Runtime Library Exception ("Exception") is an additional
permission under section 7 of the GNU General Public License, version
3 ("GPLv3"). It applies to a given file (the "Runtime Library") that
bears a notice placed by the copyright holder of the file stating that
the file is governed by GPLv3 along with this Exception.

When you use GCC to compile a program, GCC may combine portions of
certain GCC header files and runtime libraries with the compiled
program. The purpose of this Exception is to allow compilation of
non-GPL (including proprietary) programs to use, in this way, the
header files and runtime libraries covered by this Exception.

0. Definitions.

A file is an "Independent Module" if it either requires the Runtime
Library for execution after a Compilation Process, or makes use of an
interface provided by the Runtime Library, but is not otherwise based
on the Runtime Library.

"GCC" means a version of the GNU Compiler Collection, with or without
modifications, governed by version 3 (or a specified later version) of
the GNU General Public License (GPL) with the option of using any
subsequent versions published by the FSF.

"GPL-compatible Software" is software whose conditions of propagation,
modification and use would permit combination with GCC in accord with
the license of GCC.

"Target Code" refers to output from any compiler for a real or virtual
target processor architecture, in executable form or suitable for
input to an assembler, loader, linker and/or execution
phase. Notwithstanding that, Target Code does not include data in any
format that is used as a compiler intermediate representation, or used
for producing a compiler intermediate representation.

The "Compilation Process" transforms code entirely represented in
non-intermediate languages designed for human-written code, and/or in
Java Virtual Machine byte code, into Target Code. Thus, for example,
use of source code generators and preprocessors need not be considered
part of the Compilation Process, since the Compilation Process can be
understood as starting with the output of the generators or
preprocessors.

A Compilation Process is "Eligible" if it is done using GCC, alone or
with other GPL-compatible software, or if it is done without using any
work based on GCC. For example, using non-GPL-compatible Software to
optimize any GCC intermediate representations would not qualify as an
Eligible Compilation Process.

1. Grant of Additional Permission.

You have permission to propagate a work of Target Code formed by
combining the Runtime Library with Independent Modules, even if such
propagation would otherwise violate the terms of GPLv3, provided that
all Target Code was generated by Eligible Compilation Processes. You
may then convey such a combination under terms of your choice,
consistent with the licensing of the Independent Modules.

2. No Weakening of GCC Copyleft.
```

```
The availability of this Exception does not imply any general
presumption that third-party software is unaffected by the copyleft
requirements of the license of GCC.

----

                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so.  This is fundamentally incompatible with the aim of
protecting users' freedom to change the software.  The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable.  Therefore, we
have designed this version of the GPL to prohibit the practice for those
products.  If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents.
```

States should not allow patents to restrict development and use of
software on general-purpose computers, but in those that do, we wish to
avoid the special danger that patents applied to a free program could
make it effectively proprietary. To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and
modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of
works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this
License. Each licensee is addressed as "you". "Licensees" and
"recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy. The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based
on the Program.

  To "propagate" a work means to do anything with it that, without
permission, would make you directly or secondarily liable for
infringement under applicable copyright law, except executing it on a
computer or modifying a private copy. Propagation includes copying,
distribution (with or without modification), making available to the
public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other
parties to make or receive copies. Mere interaction with a user through
a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices"
to the extent that it includes a convenient and prominently visible
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License. If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A

```
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright.  Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below.  Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.
```

```
  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7.  This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
```

```
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information.  But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
```

```
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed.  Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law.  If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it.  (Additional permissions may be written to require their own
removal in certain cases when you modify the work.)  You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.
```

```
  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License.  You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations.  If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could
give under the previous paragraph, plus a right to possession of the
Corresponding Source of the work from the predecessor in interest, if
the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the
```

rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work

```
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all.  For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work.  The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time.  Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number.  If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation.  If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions.  However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
```

```
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
```

```
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

GNU Lesser General Public License v3, June 2007

```
 GNU LESSER GENERAL PUBLIC LICENSE
        Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. http://fsf.org/
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser
General Public License, and the "GNU GPL" refers to version 3 of the GNU
General Public License.

"The Library" refers to a covered work governed by this License,
other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided
by the Library, but which is not otherwise based on the Library.
Defining a subclass of a class defined by the Library is deemed a mode
of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an
Application with the Library.  The particular version of the Library
with which the Combined Work was made is also called the "Linked
Version".

The "Minimal Corresponding Source" for a Combined Work means the
Corresponding Source for the Combined Work, excluding any source code
for portions of the Combined Work that, considered in isolation, are
based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the
object code and/or source code for the Application, including any data
and utility programs needed for reproducing the Combined Work from the
Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License
without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a
facility refers to a function or data to be supplied by an Application
that uses the facility (other than as an argument passed when the
facility is invoked), then you may convey a copy of the modified
version:
```

```
a) under this License, provided that you make a good faith effort to
ensure that, in the event an Application does not supply the
function or data, the facility still operates, and performs
whatever part of its purpose remains meaningful, or

b) under the GNU GPL, with none of the additional permissions of
this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from
a header file that is part of the Library.  You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

a) Give prominent notice with each copy of the object code that the
Library is used in it and that the Library and its use are
covered by this License.

b) Accompany the object code with a copy of the GNU GPL and this license
document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

a) Give prominent notice with each copy of the Combined Work that
the Library is used in it and that the Library and its use are
covered by this License.

b) Accompany the Combined Work with a copy of the GNU GPL and this license
document.

c) For a Combined Work that displays copyright notices during
execution, include the copyright notice for the Library among
these notices, as well as a reference directing the user to the
copies of the GNU GPL and this license document.

d) Do one of the following:

       0) Convey the Minimal Corresponding Source under the terms of this
       License, and the Corresponding Application Code in a form
       suitable for, and under terms that permit, the user to
       recombine or relink the Application with a modified version of
       the Linked Version to produce a modified Combined Work, in the
       manner specified by section 6 of the GNU GPL for conveying
       Corresponding Source.

       1) Use a suitable shared library mechanism for linking with the
       Library.  A suitable mechanism is one that (a) uses at run time
       a copy of the Library already present on the user's computer
       system, and (b) will operate properly with a modified version
       of the Library that is interface-compatible with the Linked
       Version.

e) Provide Installation Information, but only if you would otherwise
be required to provide such information under section 6 of the
GNU GPL, and only to the extent that such information is
necessary to install and execute a modified version of the
Combined Work produced by recombining or relinking the
Application with a modified version of the Linked Version. (If
```

```
you use option 4d0, the Installation Information must accompany
the Minimal Corresponding Source and Corresponding Application
Code. If you use option 4d1, you must provide the Installation
Information in the manner specified by section 6 of the GNU GPL
for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based
on the Library, uncombined with any other library facilities,
conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it
is a work based on the Library, and explaining where to find the
accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions
of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.

----------------------------------------------------------------------

    GNU GENERAL PUBLIC LICENSE
       Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. http://fsf.org/
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

    Preamble

The GNU General Public License is a free, copyleft license for
software and other kinds of works.

The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.
```

```
When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so.  This is fundamentally incompatible with the aim of
protecting users' freedom to change the software.  The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable.  Therefore, we
have designed this version of the GPL to prohibit the practice for those
products.  If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents.
States should not allow patents to restrict development and use of
software on general-purpose computers, but in those that do, we wish to
avoid the special danger that patents applied to a free program could
make it effectively proprietary.  To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and
modification follow.

    TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of
works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this
License.  Each licensee is addressed as "you".  "Licensees" and
"recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy.  The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.
```

```
A "covered work" means either the unmodified Program or a work based
on the Program.

To "propagate" a work means to do anything with it that, without
permission, would make you directly or secondarily liable for
infringement under applicable copyright law, except executing it on a
computer or modifying a private copy.  Propagation includes copying,
distribution (with or without modification), making available to the
public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other
parties to make or receive copies.  Mere interaction with a user through
a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices"
to the extent that it includes a convenient and prominently visible
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License.  If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

The Corresponding Source for a work in source code form is that
same work.

2. Basic Permissions.
```

```
All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright.  Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under
the conditions stated below.  Sublicensing is not allowed; section 10
makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7.  This requirement modifies the requirement in section 4 to
    "keep intact all notices".
```

```
    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
```

```
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information.  But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed.  Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law.  If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
```

```
it.  (Additional permissions may be written to require their own
removal in certain cases when you modify the work.)  You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is
```

```
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License.  You are not responsible
for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations.  If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could
give under the previous paragraph, plus a right to possession of the
Corresponding Source of the work from the predecessor in interest, if
the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the
rights granted or affirmed under this License.  For example, you may
not impose a license fee, royalty, or other charge for exercise of
rights granted under this License, and you may not initiate litigation
(including a cross-claim or counterclaim in a lawsuit) alleging that
any patent claim is infringed by making, using, selling, offering for
sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this
License of the Program or a work on which the Program is based.  The
work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims
owned or controlled by the contributor, whether already acquired or
hereafter acquired, that would be infringed by some manner, permitted
by this License, of making, using, or selling its contributor version,
but do not include claims that would be infringed only as a
consequence of further modification of the contributor version.  For
purposes of this definition, "control" includes the right to grant
patent sublicenses in a manner consistent with the requirements of
this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free
patent license under the contributor's essential patent claims, to
make, use, sell, offer for sale, import and otherwise run, modify and
```

```
propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express
agreement or commitment, however denominated, not to enforce a patent
(such as an express permission to practice a patent or covenant not to
sue for patent infringement).  To "grant" such a patent license to a
party means to make such an agreement or commitment not to enforce a
patent against the party.

If you convey a covered work, knowingly relying on a patent license,
and the Corresponding Source of the work is not available for anyone
to copy, free of charge and under the terms of this License, through a
publicly available network server or other readily accessible means,
then you must either (1) cause the Corresponding Source to be so
available, or (2) arrange to deprive yourself of the benefit of the
patent license for this particular work, or (3) arrange, in a manner
consistent with the requirements of this License, to extend the patent
license to downstream recipients.  "Knowingly relying" means you have
actual knowledge that, but for the patent license, your conveying the
covered work in a country, or your recipient's use of the covered work
in a country, would infringe one or more identifiable patents in that
country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or
arrangement, you convey, or propagate by procuring conveyance of, a
covered work, and grant a patent license to some of the parties
receiving the covered work authorizing them to use, propagate, modify
or convey a specific copy of the covered work, then the patent license
you grant is automatically extended to all recipients of the covered
work and works based on it.

A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License.  You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all.  For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
```

```
combined work, and to convey the resulting work.  The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time.  Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number.  If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation.  If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

Later license versions may give you additional or different
permissions.  However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs
```

```
If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see http://www.gnu.org/licenses/.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
http://www.gnu.org/licenses/.

The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
http://www.gnu.org/philosophy/why-not-lgpl.html.
```

Written Offer for Source Code

For any software that you receive from Oracle in binary form which is licensed under an open source license that gives you the right to receive the source code for that binary, you can obtain a copy of the applicable source code by visiting http://www.oracle.com/goto/opensourcecode. If the source code for the binary was not provided to you with the binary, you can also receive a copy of the source code on physical media by submitting a written request to the address listed below or by sending an email to Oracle using the following link: http://www.oracle.com/goto/opensourcecode/request.

```
  Oracle America, Inc.
```

```
Attn: Senior Vice President
Development and Engineering Legal
500 Oracle Parkway, 10th Floor
Redwood Shores, CA 94065
```

Your request should include:

- The name of the binary for which you are requesting the source code
- The name and version number of the Oracle product containing the binary
- The date you received the Oracle product
- Your name
- Your company name (if applicable)
- Your return mailing address and email, and
- A telephone number in the event we need to reach you.

We may charge you a fee to cover the cost of physical media and processing.

Your request must be sent

a. within three (3) years of the date you received the Oracle product that included the binary that is the subject of your request, or

b. in the case of code licensed under the GPL v3 for as long as Oracle offers spare parts or customer support for that product model.