Data sharing, Licensing

Mikhail Dozmorov

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Data sharing

Share/cite the data

- Your data/code/report should have Digital object identifier (DOI), a unique number that identifies the digital object
- Equivalent of an international standard book number (ISBN) for digital documents
- Allows citation of a dataset - citable DOI for your research output

Data repositories

- **Dataverse**: A repository for research data that takes care of long-term preservation and good archival practices, while researchers can share, keep control of, and get recognition for their data
- **Zenodo**: A repository service that enables researchers, scientists, projects, and institutions to share data, publications, posters, images, software etc., with DOI
- **Dryad**: A repository that aims to make data archiving as simple and as rewarding as possible through a suite of services not necessarily provided by publishers or institutional websites

http://thedata.org

http://zenodo.org

http://datadryad.org

Data repositories

- **Mendeley Data**: Share everything, with DOI. Private sharing
  - Example: Genotype data for a set of 163 worldwide populations
- **FigShare**: Primarily for image data, but users can upload anything
- **SlideShare**: Share presentations, viewable and downloadable

https://data.mendeley.com/, https://data.mendeley.com/datasets/ckz9mtgrjj/1

http://figshare.com

http://www.slideshare.net/

Licensing

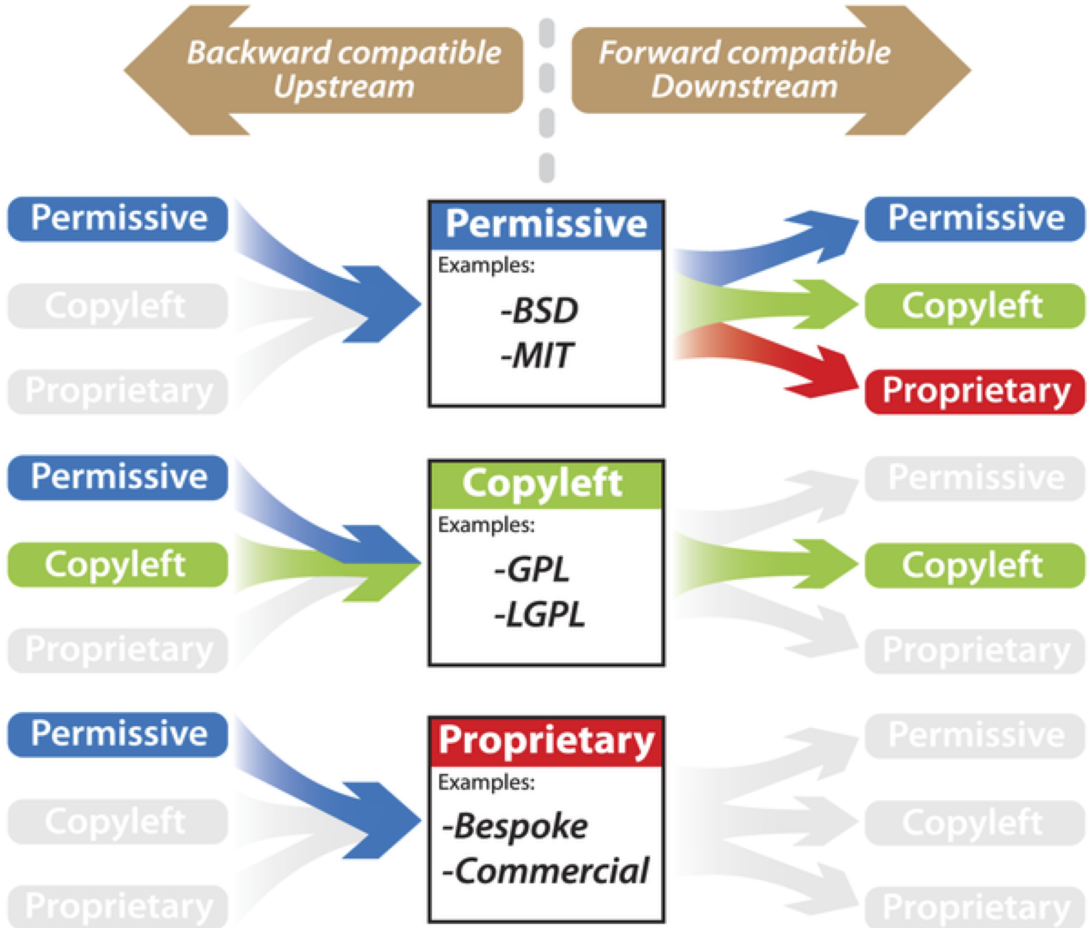
Why license?

- Software licenses are about two things: **defining copyright**, and **protecting yourself** from being held liable if your software screws something up somewhere
- In the US, copyright is automatic – the right to copy your code is yours, no one else can copy it
- "Good writers borrow, great writers steal" - T.S. Eliot

Copyright and Open Source

- Any creative work, including software code, is automatically eligible for intellectual property (and thus copyright) protection
  - Code that appears to be, or is expressly advertised as freely available has not waived such protection
- The open licences certified by the Open Source Initiative (OSI) grant at least the following rights
  - The source code is available, and may be used and redistributed without restrictions, including as part of aggregate distributions
  - Modifications or other derived works are allowed, and can be redistributed as well
  - The question of who receives these rights is not subject to discrimination, including not by fields of endeavor such as commercial versus academic

Spectrum of licensing



Morin A, Urban J, Sliz P (2012) A Quick Guide to Software Licensing for the Scientist-Programmer. PLoS Comput Biol 8(7): e1002598. doi:10.1371/journal.pcbi.1002598, http://journals.plos.org/ploscompbiol/article?id=info:doi/10.1371/journal.pcbi.1002598

Software Licensing

A few licenses are by far the most popular, including the following:

- GNU General Public License (GPL)
- MIT license
- BSD license (Berkeley Software Distribution)
- Apache License
- Do not use Creative Commons licenses for software (CC FAQ)

https://opensource.org/licenses/GPL-3.0

https://opensource.org/licenses/MIT

https://opensource.org/licenses/BSD-3-Clause

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

https://creativecommons.org/,
https://creativecommons.org/faq/#Can_I_use_a_Creative_Commons_license_for_software.3F

Software Licensing

A listing of more than 50 existing open-source licenses can be found on the Open Source Initiative (OSI) page

GPL-3

- Use, modify, distribute
- Don't hold the author liable
- Distributions must include the source code
- Software incorporating the work must also be under GPL-3 (MIT does not require that)

http://www.opensource.org/licenses/category

Data Licensing

- In most jurisdictions most types of data (with possibly the exception of photos, medical images, etc) are considered facts of nature, and are hence not eligible for copyright protection
- Therefore, using a license is confusing and inappropriate
- Creative Commons licenses for data and text are recommended, either CC-0 (the "No Rights Reserved" license) or CC-BY (the "Attribution" license, which permits sharing and reuse but requires people to give appropriate credit to the creators).

https://creativecommons.org/publicdomain/zero/1.0/

Publications Licensing

- **Creative works**: Manuals, reports, manuscripts and other creative works are eligible for intellectual property protection and are hence automatically protected by copyright, just as software source code
- Creative Commons has prepared a set of licenses using combinations of four basic restrictions:
  - **Attribution (CC-BY):** derived works must give the original author credit for their work
  - **No Derivatives (CC BY-ND):** people may copy the work, but must pass it along unchanged
  - **Share Alike (CC-BY-SA):** derivative works must license their work under the same terms as the original
  - **Noncommercial (CC BY-NC):** free use is allowed, but commercial use is not
  - **Mix-and-match (CC BY-NC-SA, CC BY-NC-ND)**

Only the Attribution (CC-BY) and Share-Alike (CC-BY-SA) licenses are considered "Open"

Human subjects research

- If you do human subjects research, you can not just put the data out
- Human subjects research must be reviewed by an Institutional Review Board (IRB). Clear protocol, informed consent, data protection plan
- Anonymized data may be exempt. But the IRB makes determination
- Not everything is research, e.g., data used only in a course

HIPAA

- HIPAA = Health Insurance Portability and Accountability Act of 1996
- Special rules about medical data with any identifying information – focus on privacy and security
- Definition of "potentially identifying information" is very broad (zip code, dates of a survey)
- Special security measures = paperwork

How to add a license

When a repository with source code, a manuscript or other creative works becomes public, it should include a file `LICENSE` or `LICENSE.txt` in the base directory of the repository that clearly states under which license the content is being made available

You may also want to include a file called `CITATION` or `CITATION.txt` that describes how to reference your work

Example of CITATION

BibTex format

```
@online{wilson-software-carpentry-2013,
  author       = {Greg Wilson},
  title        = {Software Carpentry: Lessons Learned},
  version      = {1},
  date         = {2013-07-20},
  eprinttype   = {arxiv},
  eprint       = {1307.5448}
}
```

Rendered as: Greg Wilson: "Software Carpentry: Lessons Learned". arXiv:1307.5448, July 2013.

Summary

- If you don't license your software, it can't be modified or reused - pick a license, any license
- Use MIT or GPL for software
- Use CC0 for data
- Cite sources of software and data
- Be careful with human data – ask, if not sure

https://blog.codinghorror.com/pick-a-license-any-license/