

MASTERING SOFTWARE PUBLICATIONS

WHAT, WHY, HOW



Open Access Week 2019

25.10.2019 | Oliver Bertuch



\$ WHOAMI

OLIVER BERTUCH

- Research Software Engineer + DevOp
- Working at [RDM division of Central Library](#)
- Hacking on [Dataverse](#) and [Jülich DATA](#)
- Part of GitLab AK and pushing [RSE](#)

WHAT IS RESEARCH SOFTWARE?

SOFTWARE IN SCIENCE

PRECOOKED PACKAGES

- e.g. Office, CAD, device software
- Use-case focused, few options to adapt

RESEARCH SOFTWARE

WALLED GARDENS

- e.g. MatLab, LabView, Origin, IDL, Maple, ...
- Programming in domain language only

CUSTOM DEVELOPMENT

- e.g. scripts, libraries, custom apps, ...
- Using Python, R, Java and many more
- All degrees of freedom

RESEARCH SOFTWARE

... is ...

- integral part of most scientific work.
- of great bandwidth in both complexity and scope.
- usually highly domain specific.
- developed by employees.
- cause and objective of international cooperations.
- sometimes subject to science itself.
- (yet) hard to gather with bibliographic tools.

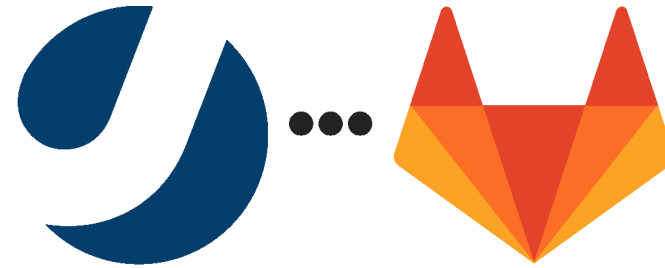
We should talk about this in-depth some other time.



INTRODUCING GITLAB

From project planning and source code management to CI/CD and monitoring, GitLab is a complete DevOps platform, delivered as a single application.

<https://about.gitlab.com>



GITLAB ON & OFF CAMPUS

- Use it for all kinds of stuff - it's more than only source code
- Where to go?

Internal use only?
Confidential?
Splitted dev?



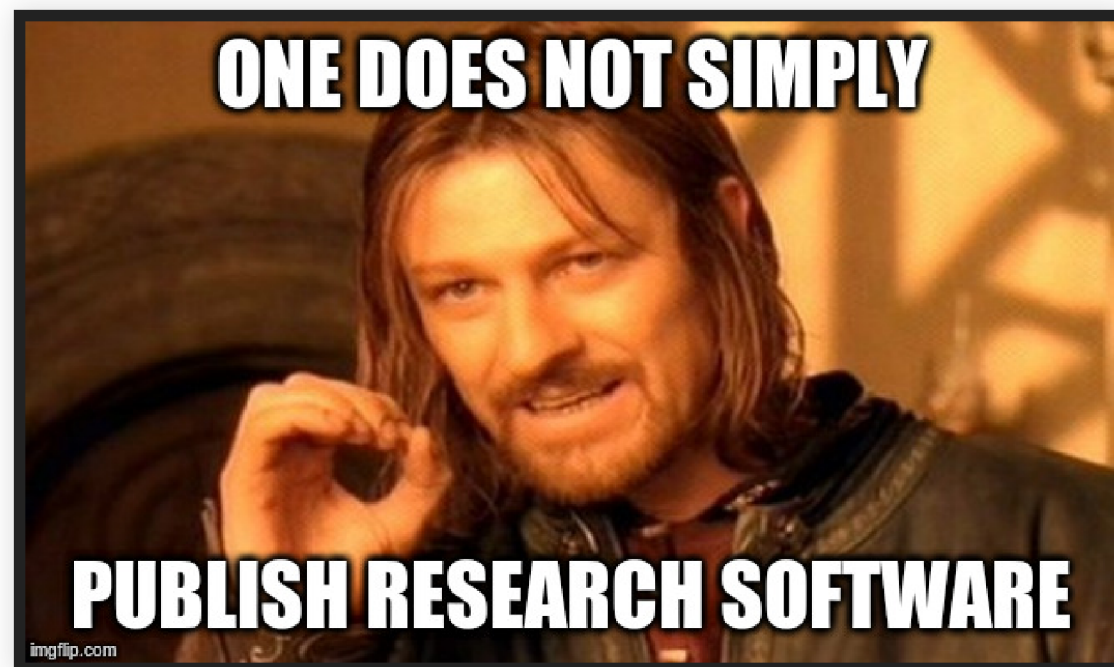
goto internal GitLab
gitlab.fz-juelich.de

External access?
Collaboration?
Publishing?



goto JuGit
jugit.fz-juelich.de

GOING PUBLIC...



THINGS TO THINK OF

(AT LEAST) BEFORE GOING PUBLIC

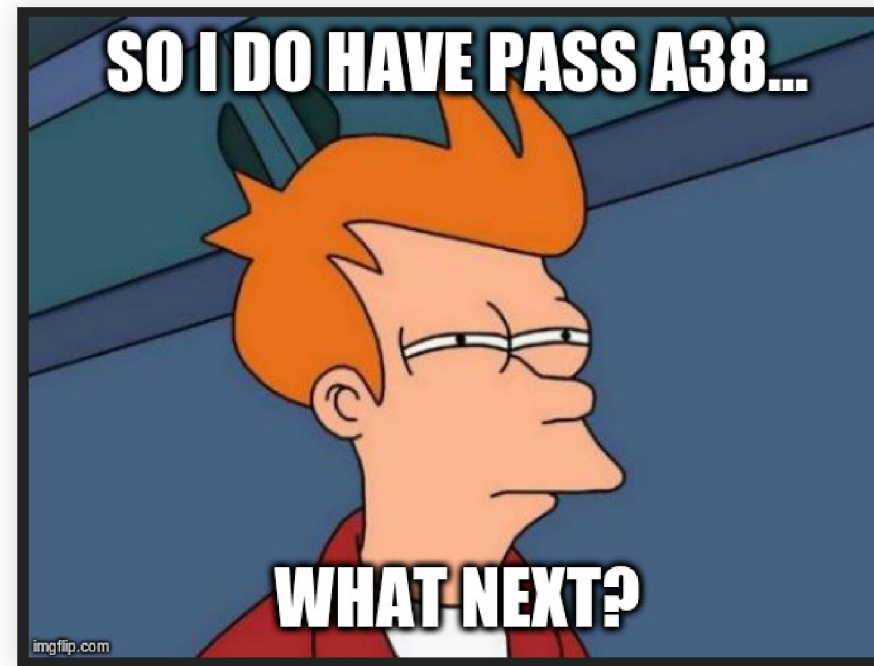
- Consent with co-authors, head of institute et al
- Intellectual property, Laws, Patents
- Licensing
- Monetarization [, Business Modell]
- [Support, Quality control, Testing]

In doubt: ask an expert.

(💡 pro-tip: ask before you start coding.)

intranet.fz-juelich.de/zb/rse_license

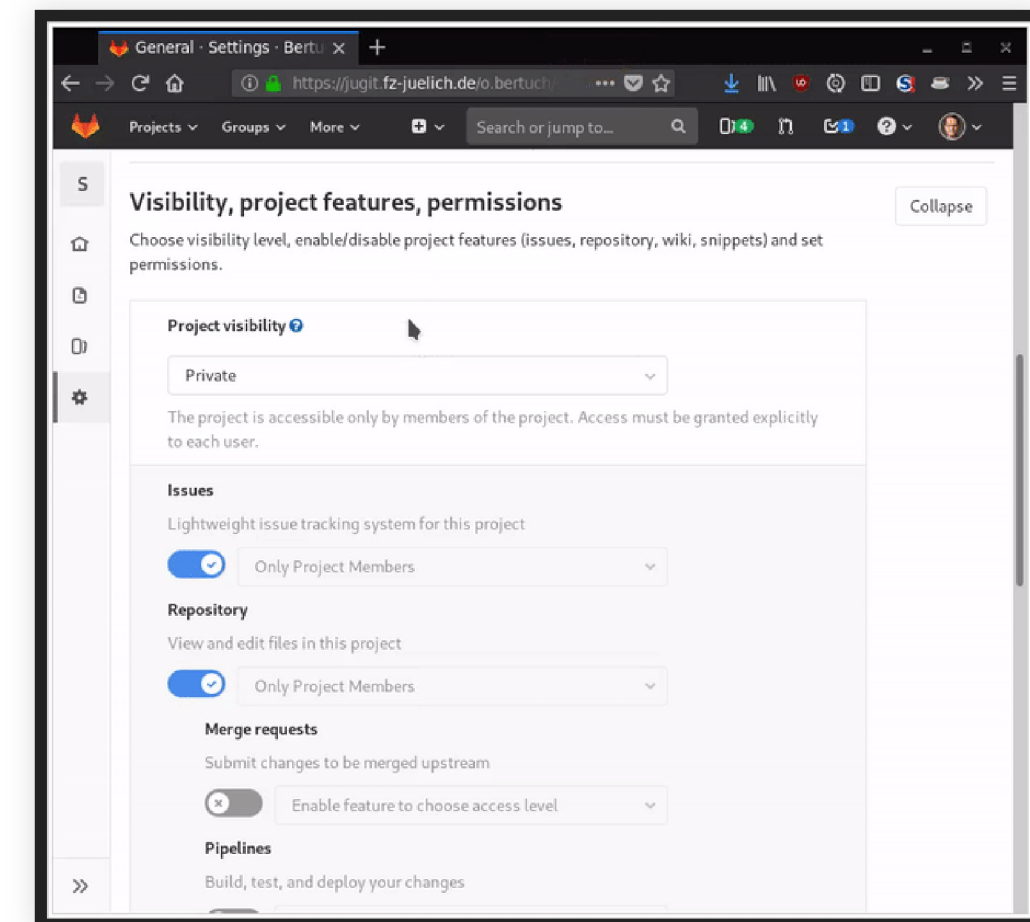
See section "Where do I get active support?"



PUBLISHING LEVEL 0: "A SIMPLE OPTION"

JUST MAKE IT PUBLIC

- Go to project setting on JuGit
- Enable public visibility.
- ☠️ Don't think it's "published"
- 🔓 *But it's Open Access!* 😊



PUBLISHING LEVEL 1.1: "METADATA - A NEW HOPE"

IMAGINE A WORLD WHERE SOFTWARE COUNTS

1. 👍 Software gets citeable with DOIs
2. 👍 Acknowledgement and credibility
3. 👍 Better Software, Better Research



✌️ "All we need is ~~love~~" metadata...

PUBLISHING LEVEL 1.2: "METADATA - A NEW HOPE"

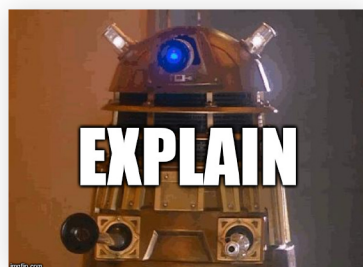
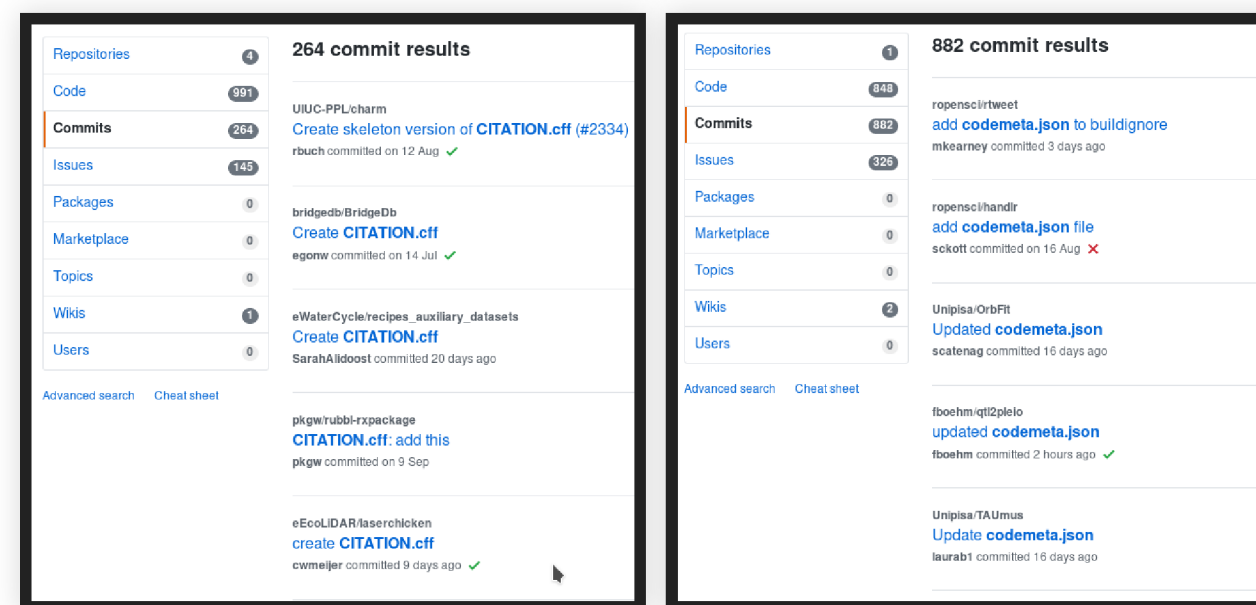
HOW TO ADD METADATA TO YOUR SOFTWARE

💡 *Basic idea:*

Add standardized, version controlled metadata file to your repository.

🔗 *Two emerging standards:*

- CodeMeta
- Citation File Format



👁 See Research Software Citation:
Cite and Make Citable

UNLOCKED: PUBLISHING LEVEL 2

"REPOSITORIES - WRITE ONCE, READ MANY"

- 👍 All publishing options as with research data
- 👍 Quick'n'easy
- Software fits mostly in general purpose repos like [Zenodo](#)
- [Jülich DATA](#) uses [Dataverse](#), [CodeMeta](#) support in the works

PUBLISHING LEVEL 2.1: "ADVENTURES IN REPOLAND"



- Push Mirror Releases from (our) GitLab to GitHub
- [Push Releases from GitHub to Zenodo](#)

PUBLISHING LEVEL 2.2: "NEXT STOP: REPOLAND OUTLOOK"

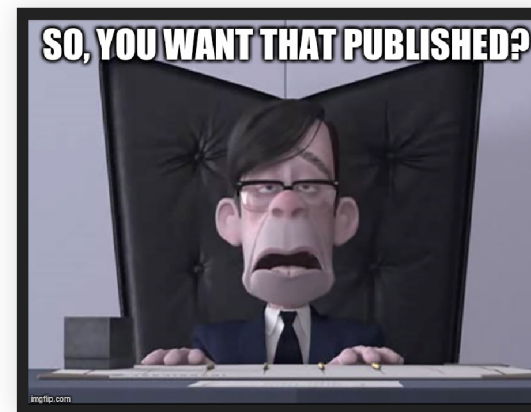
(☁️ DREAMING)

- Push releases using [GitLab CI job](#)
- From our [GitLab](#) to:
 - [Jülich DATA](#)
 - [JuSER](#)
- Jülich DATA assigns [DataCite DOIs](#)



UNLOCKED: PUBLISHING LEVEL 3 (END BOSS)

"SOFTWARE JOURNALS"



- 👍 Journals for research software as with data journals
- 👍 Real journals with real reviews: credit++
- Exhaustive [list of journals](#) can be found at SSI
 - Outstanding 1: [JOSS](#)
 - Outstanding 2: [JORS](#)

PUBLISHING: AFTERMATH

"SOFTWARE HERITAGE"








<https://archive.softwareheritage.org/>

- Goal: archive all (public) software invented by mankind [PDF]
- Harvesting public sources, [pushing from CI possible via API](#)

⌚ THANK YOU.

QUESTIONS?

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