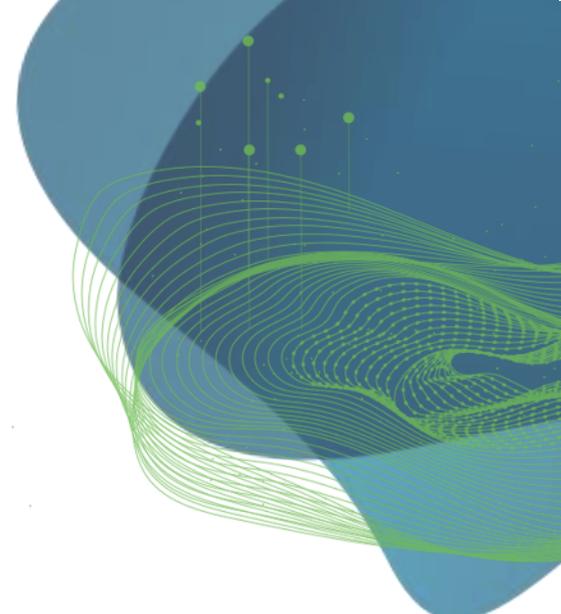


Cultivating Open Training

Robert Haase



GEFÖRDERT VOM



Bundesministerium
für Bildung
und Forschung



Diese Maßnahme wird gefördert durch die Bundesregierung aufgrund eines Beschlusses des Deutschen Bundestages. Diese Maßnahme wird mitfinanziert durch Steuermittel auf der Grundlage des von den Abgeordneten des Sächsischen Landtags beschlossenen Haushaltes.

Career update: Cultivating Open Training

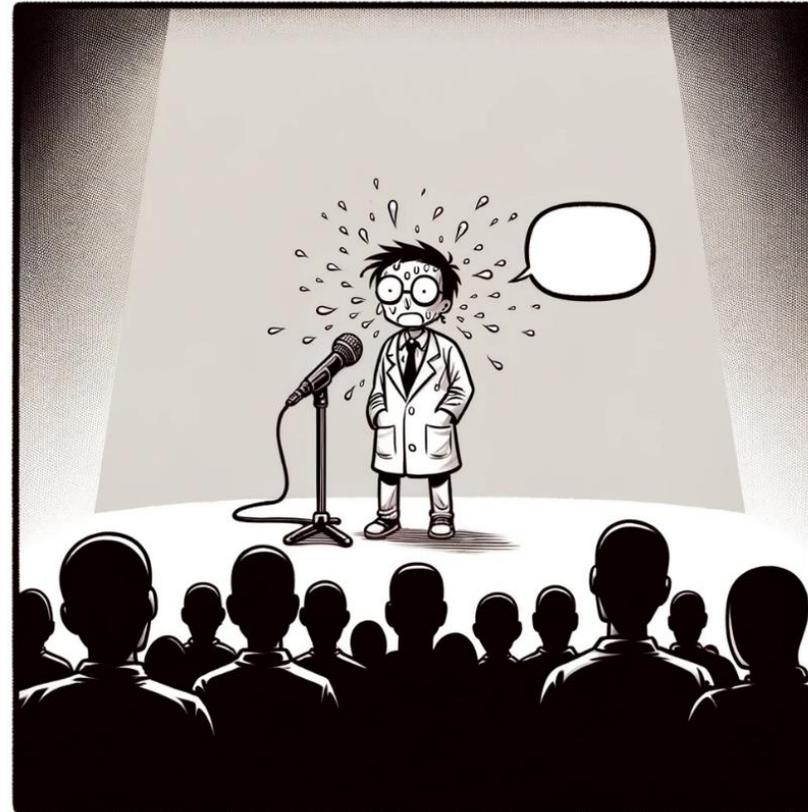
- Since 2023: PI of the “Global BioImage Analysts' Society (GloBIAS)”, formerly known as the Society for Knowledge Exchange in BioImage Analysis
- Since 2023: Task area lead “Training and community integration” of the German National Research Data Management Infrastructure for Bioimaging NFDI4BioImage
- Since 2024: Lecturer and training coordinator at the Center for Scalable Data Analytics and Artificial Intelligence (ScaDS.AI / Leipzig University)



Closed science

Why are some science-related materials/data/code not shared?

- Reasons
 - Risk of being scooped
 - Fear of blaming oneself (imposter syndrome)
 - Lack of awareness (who is allowed to publish *my work*?)

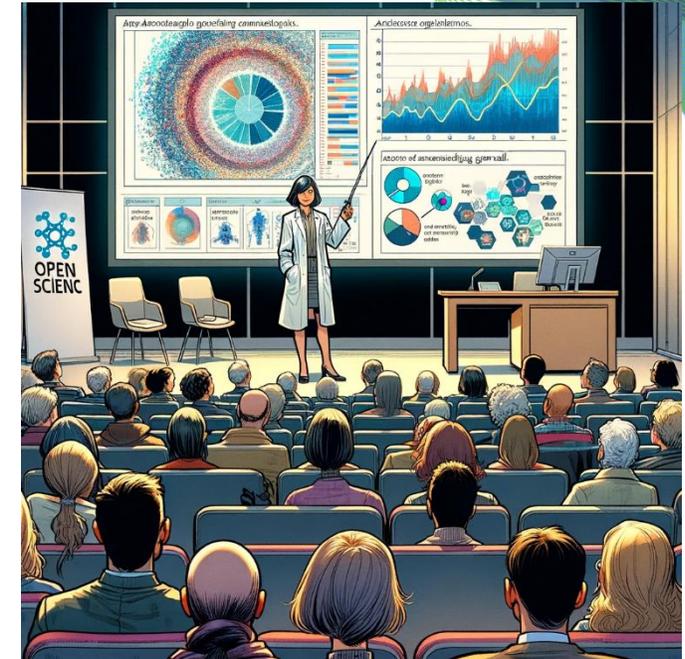


Open Science

- Research related
(hot topics)
- Often tailored towards
general audience
(science communication)
- Earliest at the time a
manuscript is published
(e.g. as preprint)

Open Training

- Routine tasks
(colder topics)
- Transfer of
domain-specific
knowledge



Am I allowed to publish my stuff?

Define responsibilities and procedures early!



"Data / materials we produce will be published under CC-BY 4.0"

"Robert will do this by September!"

DMP

- Only if procedures are defined early, everyone can follow them.
- Licenses are important when assembling materials (-> Copyright)
- Meta-data might have higher quality if the person responsible for publishing the data is aware of their duties.

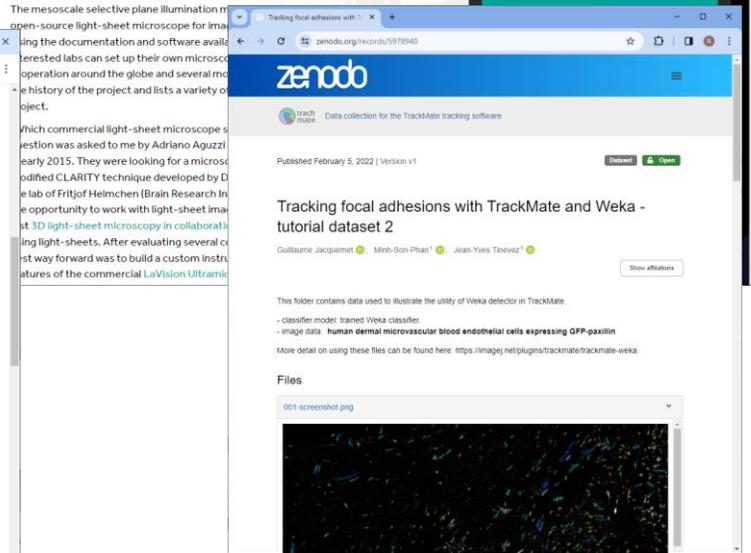
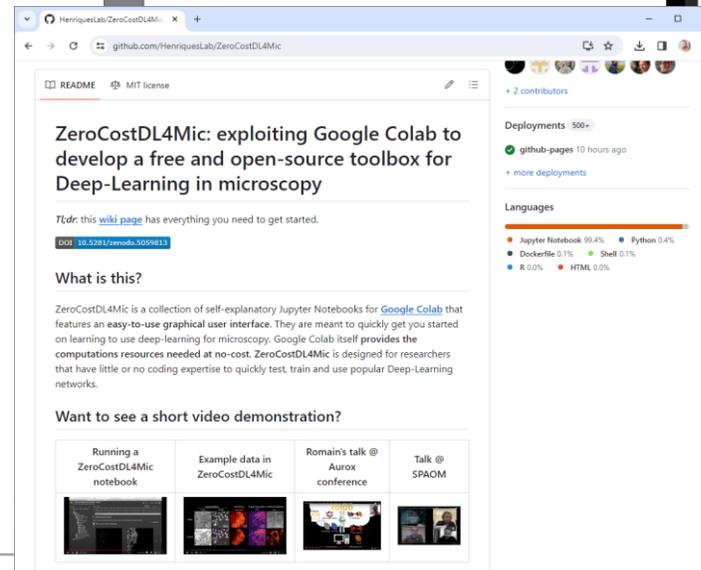
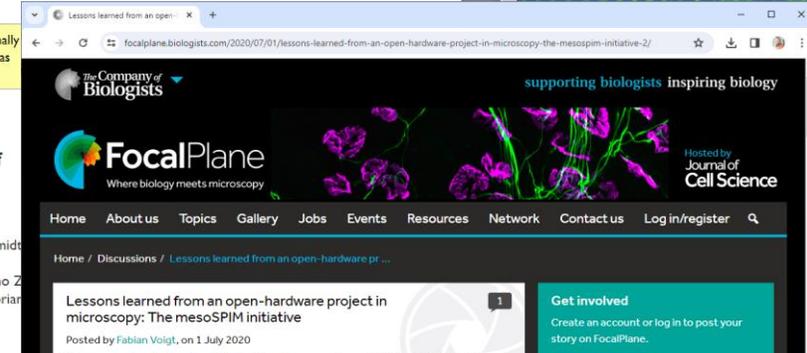
Are we going to publish data / materials / code?

What license can we use?

Deciding by the end of the project is too late!

Where to share?

- Open *science* related content
 - bioRxiv (manuscripts, no reviews)
 - Figshare
 - F1000
 - Bioimage Archive (data)
 - Github (code)
 - Zenodo
 - Focalplane
 - Institutional servers (if there is no alternative)



Where to share?

Github pages



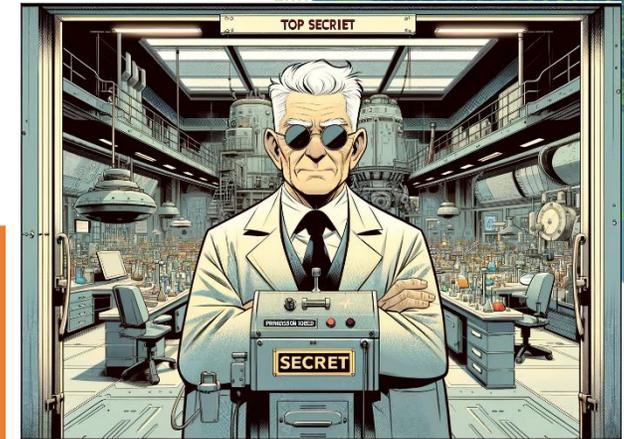
- Open *training* related content
 - bioRxiv (manuscripts, no reviews)
 - Figshare
 - F1000
 - Bioimage Archive (data)
 - Github (code)
 - Zenodo
 - Focalplane
 - Institutional servers (if there is no alternative)

The collage includes several screenshots: a GitHub repository page for 'Prompt Engineering Tutorial' by ScaDS, a slide from F1000Research titled 'Sharing and licensing material' by Robert Haase, a Zenodo record for 'Train-the-Trainer Concept on Research Data Management', and a diagram showing 'Sharing and licensing material' with categories like Code, Slides, Text, and Data.

Licensing: Permissive versus restrictive

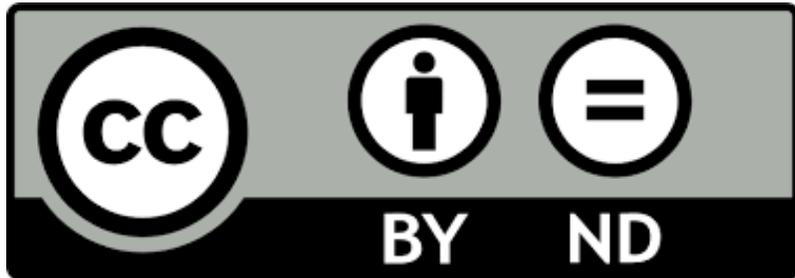
- Restrictive
 - You can reuse our stuff, but only if you ...
 - License your work with the same license we do
 - Make your stuff openly available
 - Make no money with derivatives of our work
 - Examples: GPL, CC-BY-SA, CC-BY-NC, CC-BY-ND
- Permissive licensing:
 - Do whatever you like with our stuff, just make sure to mention / cite us ...
 - Examples: BSD, MIT, Apache, CC-BY

I conclude, these are less *open* in a sense



Licensing: Permissive versus restrictive

- Who knows what the ND stands for?



You are free to:

Share — copy and redistribute the material in any medium or format for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

“permissive”

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NoDerivatives — If you remix, transform, or build upon the material, you may not distribute the modified material.

“restrictive”

Licensing: Permissive versus restrictive

I hope nobody feels hurt
by the following slides.

I just would like to
make a point.

Licensing: Permissive versus restrictive

Example

bioRxiv
THE PREPRINT SERVER FOR BIOLOGY

HOME | SUBMIT | FAQ | BLOG | ALERTS / RSS
| ABOUT | CHANNELS

Search
Advanced Search

New Results [Follow this preprint](#) [Previous](#) [Next](#)

Posted June 08, 2022.

[Download PDF](#) [Email](#)
[Print/Save Options](#) [Share](#)
[Data/Code](#) [Citation Tools](#)

[Post](#) [Like 0](#)

COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

Subject Area
Bioinformatics

Subject Areas
All Articles
Animal Behavior and Cognition
Biochemistry
Bioengineering

Abstract Full Text **Info/History** Metrics [Preview PDF](#)

ARTICLE INFORMATION

doi <https://doi.org/10.1101/2022.06.07.495102>
History June 8, 2022.

Copyright The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under a **CC-BY-ND 4.0** International license.

I would love to show you a Figure from this paper!

But I'm not allowed!

Licensing: Permissive versus restrictive

Example

The screenshot shows the bioRxiv preprint page for the article "Content-Aware Image Restoration: Pushing the Limits of Fluorescence Microscopy". The page includes the bioRxiv logo, navigation links, a search bar, and a list of authors. The article title is prominently displayed. Below the title, there are options to download the PDF, print/save options, and supplementary material. The article information section shows the DOI (https://doi.org/10.1101/236463) and the date (July 3, 2018). The article versions section lists four versions, with the current version being Version 5. The copyright notice states: "The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license." The text "aCC-BY-NC-ND 4.0" is highlighted with a red box.

I would love to show you a Figure from this paper!

But I'm not allowed!

Licensing: Permissive versus restrictive

Example

bioRxiv THE PREPRINT SERVER FOR BIOLOGY

HOME | SUBMIT | FAQ | BLOG | ALERTS / RSS | ABOUT | CHANNELS

Search Advanced Search

New Results Follow this preprint

Omnipose: a high-precision morphology-independent solution for bacterial cell segmentation

Kevin J. Cutler, Carsen Stringer, Paul A. Wiggins, Joseph D. Mougous
doi: <https://doi.org/10.1101/2021.11.03.467199>
Now published in *Nature Methods* doi: 10.1038/s41592-022-01639-4

Download PDF Print/Save Options Data/Code Revision Summary

Post

COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

Subject Area Microbiology

Subject Areas All Articles

Animal Behavior and Cognition Biochemistry Bioengineering Bioinformatics

ARTICLE INFORMATION doi: <https://doi.org/10.1101/2021.11.03.467199> History July 27, 2022.

ARTICLE VERSIONS

Version 1 (November 4, 2021 - 17:20).
Version 2 (November 5, 2021 - 13:38).
Version 3 (December 2, 2021 - 19:27).
You are viewing Version 4, the most recent version of this article.

Copyright The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

I would love to show you a Figure from this paper!

But I'm not allowed!

Licensing: Permissive versus restrictive

Example

The screenshot shows a bioRxiv preprint page. The title is "Bridging the Gap: Integrating Cutting-edge Techniques into Biological Imaging with deepImagej". The authors listed are Caterina Fuster-Barceló, Carlos García López de Haro, Estibaliz Gómez-de-Mariscal, Wei Ouyang, Jean-Christophe Olivo-Marin, and Daniel Sage, Arrate Muñoz-Barrutia. The DOI is <https://doi.org/10.1101/2024.01.12.575015>. The page indicates it is a preprint not certified by peer review. The license is CC-BY-ND 4.0 International, which is highlighted with a red box. The page also features a search bar, navigation links, and social media sharing options.

I would love to show you a Figure from this paper!

But I'm not allowed!

Licensing: Permissive versus restrictive

Example

The screenshot shows a web browser window displaying a bioRxiv preprint article. The article title is "napari-threedee: a toolkit for human-in-the-loop 3D image analysis in napari" by Kevin A. Yamauchi and Alister Burt. The article is dated July 30, 2023. The bioRxiv logo and "THE PREPRINT SERVER FOR BIOLOGY" are visible at the top. The article information section includes the DOI: <https://doi.org/10.1101/2023.07.28.550950> and the copyright notice: "The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under a **CC-BY-ND 4.0 International** license." The license text is highlighted with a red box. The article is categorized under "Bioengineering" and "Subject Areas".

I would love to show you a Figure from this paper!

But I'm not allowed!

Licensing: Permissive versus restrictive

Example

THE PREPRINT SERVER FOR BIOLOGY

Search Advanced Search

New Results [Follow this preprint](#) [Previous](#) [Next](#)

BIAFLOWS: A collaborative framework to reproducibly deploy and benchmark bioimage analysis workflows

Ulysse Rubens, Romain Mormont, Lassi Paavolainen, Volker Bäcker, Gino Michiels, Benjamin Pavie, Leandro A. Scholz, Martin Maška, Devrim Ünay, Graeme Ball, Renaud Hoyoux, Rémy Vandaele, Ofra Golani, Anatole Chessel, Stefan G. Stanci, Natasa Sladoje, Perrine Paul-Gilloteaux, Raphaël Marée, Sébastien Tosi

doi: <https://doi.org/10.1101/707489>

Now published in *Patterns* doi: [10.1016/j.patter.2020.100040](https://doi.org/10.1016/j.patter.2020.100040)

[Download PDF](#) [Email](#)
[Print/Save Options](#) [Share](#)
[Supplementary Material](#) [Citation Tools](#)
[Data/Code](#)
[Revision Summary](#)

[Post](#)

COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

Subject Area **Bioinformatics**

Subject Areas

All Articles

Animal Behavior and Cognition
Biochemistry
Bioengineering
Bioinformatics

ARTICLE INFORMATION

doi <https://doi.org/10.1101/707489>

History February 6, 2020.

ARTICLE VERSIONS

Version 1 (July 19, 2019 - 10:19).
Version 2 (November 29, 2019 - 03:31).
You are viewing Version 3, the most recent version of this article.

Copyright The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

I would love to show you a Figure from this paper!

But I'm not allowed!

Licensing: Permissive versus restrictive

Example

bioRxiv
THE PREPRINT SERVER FOR BIOLOGY

HOME | SUBMIT | FAQ | BLOG | ALERTS / RSS
| ABOUT | CHANNELS

Search
Advanced Search

New Results [Follow this preprint](#) [Previous](#) [Next](#)

ModularImageAnalysis (MIA): Assembly of modularised image and object analysis workflows in ImageJ

Stephen J. Cross, Jordan D.J.R. Fisher, Mark A. Jepson
doi: <https://doi.org/10.1101/2023.06.12.544614>
Now published in *Journal of Microscopy* doi: [10.1111/jmi.13227](https://doi.org/10.1111/jmi.13227)

[Download PDF](#) [Email](#)
[Print/Save Options](#) [Share](#)
[Data/Code](#) [Citation Tools](#)

[Post](#)

COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

Subject Area
Bioinformatics

Subject Area
All Articles

Abstract Full Text **Info/History** Metrics [Preview PDF](#)

ARTICLE INFORMATION

doi: <https://doi.org/10.1101/2023.06.12.544614>
History: June 12, 2023.

Copyright: The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

I would love to show you a Figure from this paper!

But I'm not allowed!

Licensing: Permissive versus restrictive

Restrictive licensing is
a community-wide issue.

I presume due to lack of
awareness & training

Train the trainers!

Licensing: Permissive versus restrictive

	Download and share for free	Reuse parts, e.g. Figures	Reuse parts, e.g. in paid training
CC-BY	✓	✓	✓
CC-BY-SA	✓ Only under CC-BY-SA	✓ Only under CC-BY-SA	✓ Only under CC-BY-SA
CC-BY-NC	✓	✓ (if free of charge)	✗
CC-BY-ND	✓	✗	✗
CC-BY-NC-ND	✓	✗	✗

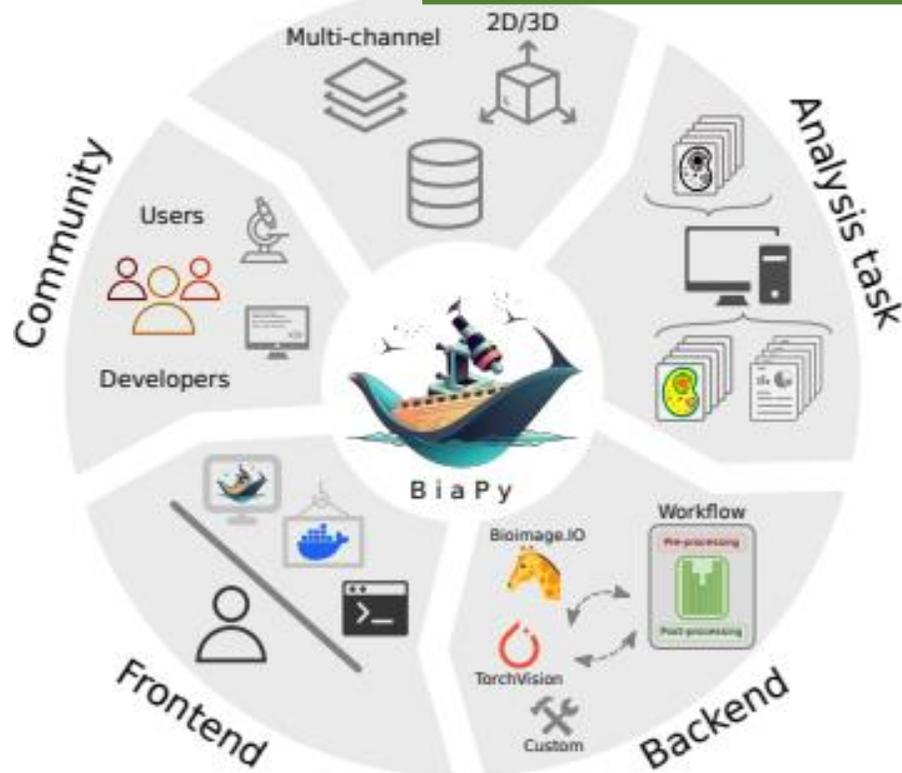
Bad for the progress of science

In particular in the context of training

Licensing: Permissive versus restrictive

Example

Look at this great figure! It's cropped from / licensed [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/) by D. Franco-Barranco et al.



bioRxiv THE PREPRINT SERVER FOR BIOLOGY

New Results [Follow this preprint](#)

BiaPy: A unified framework for versatile bioimage analysis with deep learning

Daniel Franco-Barranco, Jesus Angel Andres-San Roman, Ivan Hidalgo-Cenalmor, Lenka Backova, Aitor Gonzalez-Marfil, Clement Caporal, Anatole Chessel, Pedro Gomez-Galvez, Luis M. Escudero, Donglai Wei, Arrate Munoz-Barrutia, Ignacio Arganda-Carreras

doi: <https://doi.org/10.1101/2024.02.03.576026>

This article is a preprint and has not been certified by peer review [what does this mean?].

Abstract **Info/History** Metrics [Preview PDF](#)

ARTICLE INFORMATION

doi <https://doi.org/10.1101/2024.02.03.576026>

History February 5, 2024.

Copyright The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under a **CC-BY 4.0** International license.

Download PDF, Print/Save Options, Data/Code, Email, Share, Citation Tools

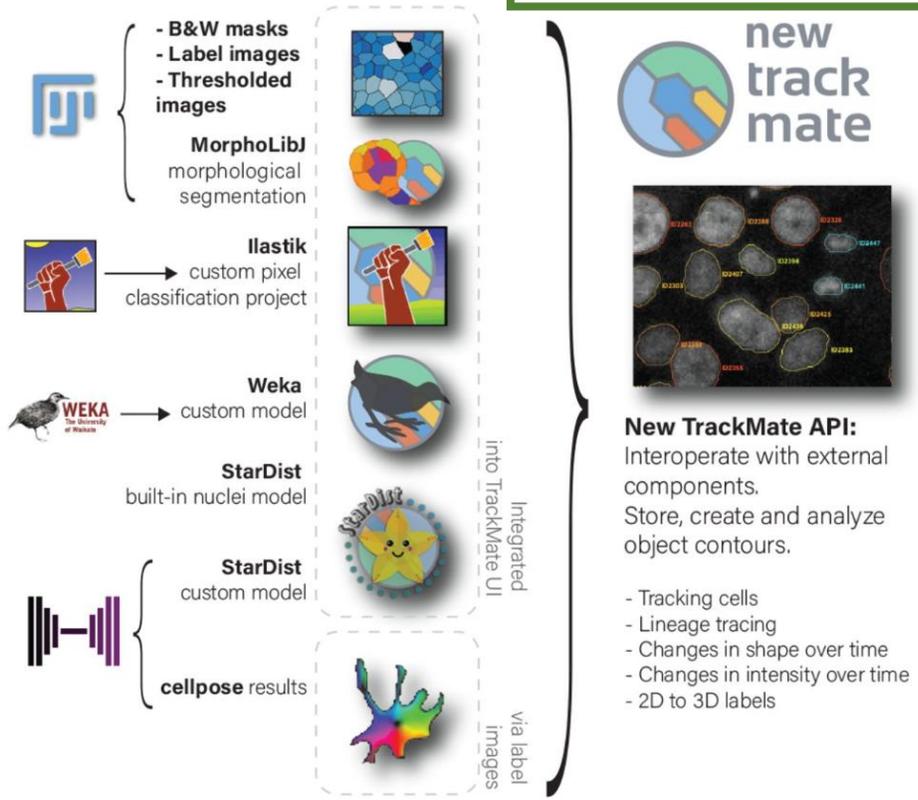
COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

Subject Area: Bioinformatics

Licensing: Permissive versus restrictive

Example

Look at this great figure!
It's take from / licensed [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/) by D. Ershov et al.



bioRxiv THE PREPRINT SERVER FOR BIOLOGY

HOME | SUBMIT | FAQ | BLOG | ALERTS / RSS | ABOUT | CHANNELS

Search [] Advanced Search

New Results [Follow this preprint](#)

Bringing TrackMate into the era of machine-learning and deep-learning

Dmitry Ershov, Minh-Son Phan, Joanna W. Pylvänäinen, Stéphane U. Rigaud, Laure Le Blanc, Arthur Charles-Orszag, James R.W. Conway, Romain F. Laine, Nathan H. Roy, Daria Bonazzi, Guillaume Duménil, Guillaume Jacquemet, Jean-Yves Tinevez

doi: <https://doi.org/10.1101/2021.09.03.458852>

This article is a preprint and has not been certified by peer review [what does this mean?].

Abstract Full Text **Info/History** Metrics Preview PDF

ARTICLE INFORMATION

doi: <https://doi.org/10.1101/2021.09.03.458852>

History September 20, 2021.

ARTICLE VERSIONS

Version 1 (September 3, 2021 - 10:30).
You are viewing Version 2, the most recent version of this article.

Copyright The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under a [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/) International license.

Download PDF Print/Save Options Supplementary Material Data/Code Revision Summary

COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

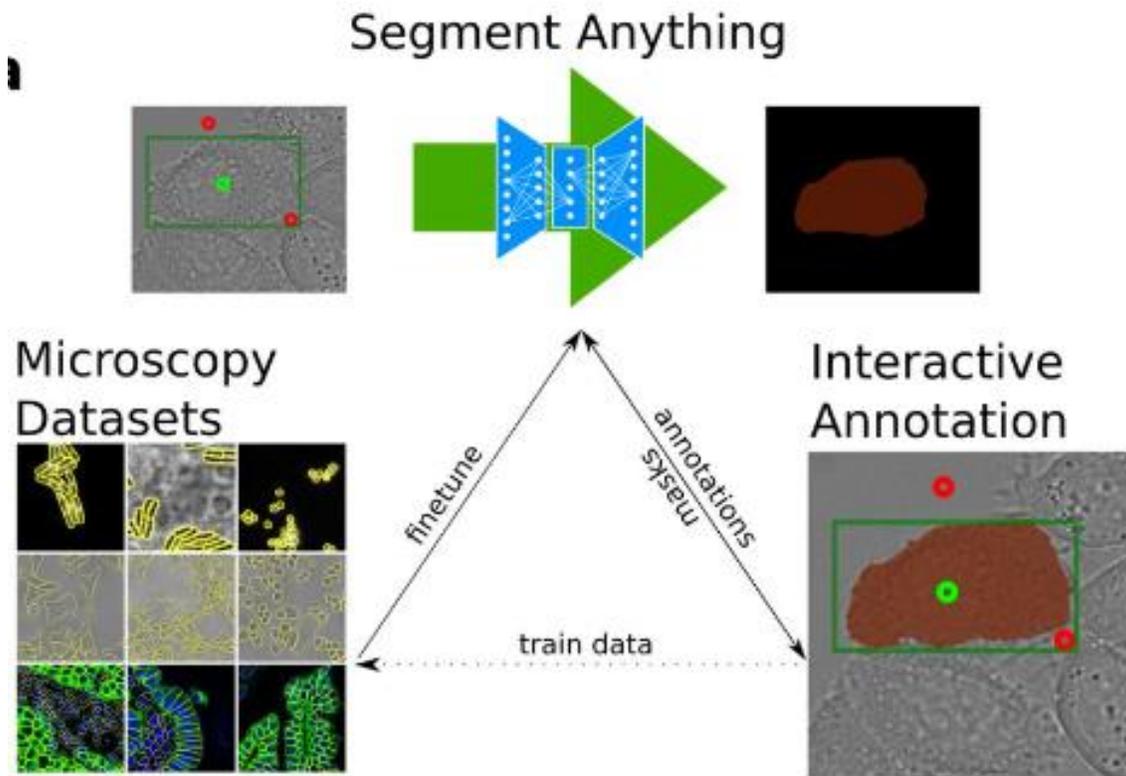
Subject Area **Bioinformatics**

Subject Areas
All Articles
Animal Behavior and Cognition
Biochemistry
Bioengineering

Licensing: Permissive versus restrictive

Example

Look at this great figure! It's cropped from / licensed [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/) by A. Archit et al.

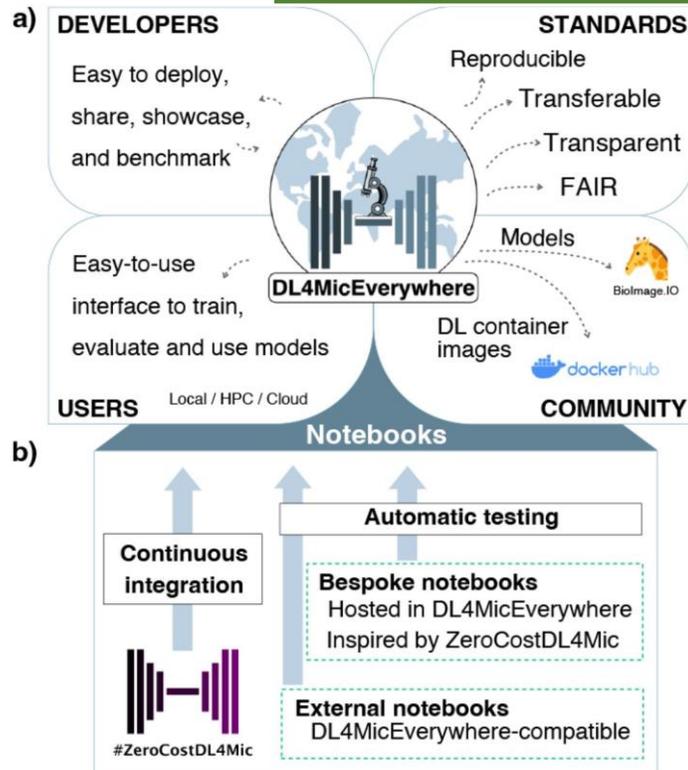


The screenshot shows the bioRxiv preprint page for the article 'Segment Anything for Microscopy'. The page includes the bioRxiv logo, navigation links, a search bar, and a list of authors: Anwai Archit, Sushmita Nair, Nabeel Khalid, Paul Hilt, Vikas Rajashekar, Marei Freitag, Sagnik Gupta, Andreas Dengel, Sheraz Ahmed, and Constantin Pape. The article is dated August 22, 2023, and has a DOI of <https://doi.org/10.1101/2023.08.21.554208>. The copyright notice states: 'The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/) International license.' The page also features social media sharing options and a 'Post' button.

Licensing: Permissive versus restrictive

Example

Look at this great figure! It's cropped from licensed [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/) by I. Hidalgo-Cenalmor et al.



DL4MicEverywhere: Deep learning for microscopy made flexible, shareable, and reproducible

Posted November 19, 2023.

Download PDF **Email**
Print/Save Options **Share**
Data/Code **Citation Tools**

COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

Subject Area
Bioinformatics

Subject Areas
All Articles
Animal Behavior and Cognition

ARTICLE INFORMATION

doi <https://doi.org/10.1101/2023.11.19.567606>

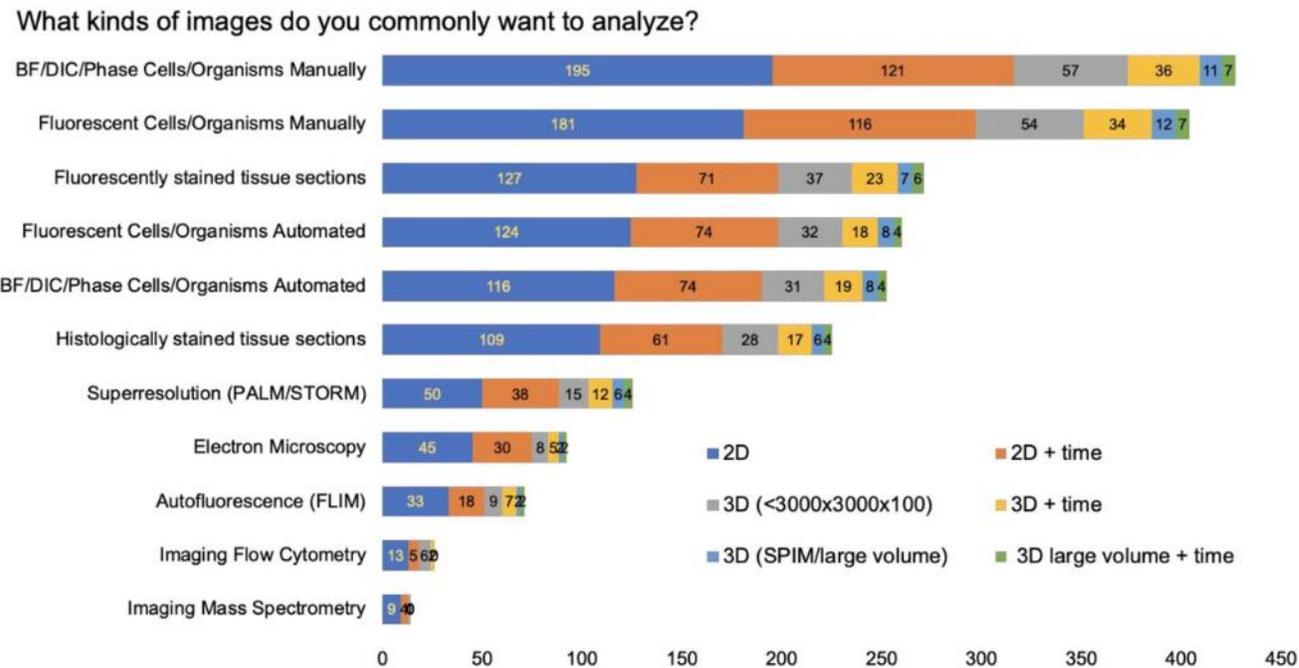
History November 19, 2023.

Copyright The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under a [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/) International license.

Licensing: Permissive versus restrictive

Example

Look at this great figure! It's cropped from / licensed [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/) by N. Jamali et al.



bioRxiv THE PREPRINT SERVER FOR BIOLOGY

2020 BioImage Analysis Survey: Community experiences and needs for the future

Nasim Jamali, Ellen TA Dobson, Kevin W. Eliceiri, Anne E. Carpenter, Beth A. Cimini

doi: <https://doi.org/10.1101/2021.08.16.456498>

Now published in *Biological Imaging* doi: [10.1017/S2633903X21000039](https://doi.org/10.1017/S2633903X21000039)

Abstract Full Text Info/History Metrics Preview PDF

ARTICLE INFORMATION

doi: <https://doi.org/10.1101/2021.08.16.456498>

History October 21, 2021.

ARTICLE VERSIONS

Version 1 (August 17, 2021 - 08:12).

You are viewing Version 2, the most recent version of this article.

Copyright The copyright holder for this preprint is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under a [CC-BY 4.0 International license](https://creativecommons.org/licenses/by/4.0/).

Download PDF Print/Save Options Data/Code Email Share Citation Tools

COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

Subject Area Bioinformatics

Subject Areas All Articles

- Animal Behavior and Cognition
- Biochemistry
- Bioengineering
- Bioinformatics

Licensing: Permissive versus restrictive

Example

Look at this great figure! It's taken from M. Hartley et al.

The screenshot shows the BioImage Archive interface. At the top, there is a search bar with the text 'Search BioImages' and 'Examples: brain, cap40'. Below the search bar, there are navigation links: Home, Browse, Submit, About us, and Feedback. The main content area displays the title of a preprint: 'The glucosylceramide synthase inhibitor PDMP causes lyso-somal lipid accumulation and mTOR inactivation'. The authors listed are Pia Hartwig and Doris Höglinger. Below the title, there is a 'Data files' section with a table listing three files:

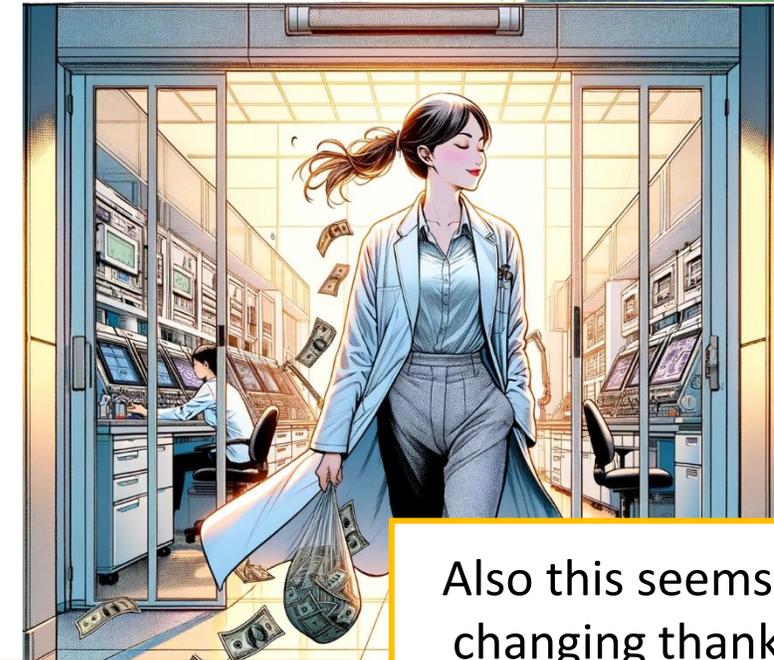
Name	Size	Section	staining	cells	labelling	treatment	Channel 1	Channel 2	timepoint
experimentA_11_WT_Miglustat.czi	1.6 MB	Study Component	click chemistry and IF	WT	pacSph	50 µM NB-DNJ (Miglustat)	pacSph	Lamp1	continuous labelling
experimentA_12_SGPL1_PDMP.czi	1.6 MB	Study Component	click chemistry and IF	SGPL1-/-	pacSph	20 µM PDMP	pacSph	Lamp1	continuous labelling
experimentA_13_SGPL1_PDMP.czi	1.6 MB	Study Component	click chemistry and IF	SGPL1-/-	pacSph	20 µM PDMP	pacSph	Lamp1	continuous labelling

The screenshot shows the bioRxiv preprint server interface. The article title is 'The BioImage Archive - building a home for life-sciences microscopy data'. The authors listed are Matthew Hartley, Gerard J. Kleywegt, Ardan Patwardhan, Ugis Sarkans, Jason R. Swedlow, and Alvis Brazma. The article is published in the *Journal of Molecular Biology* with a DOI of 10.1016/j.jmb.2022.167505. The article information section shows the DOI as https://doi.org/10.1101/2021.12.17.473169 and the history as February 11, 2022. The article versions section shows that the user is viewing Version 2, the most recent version of this article. The copyright notice states: 'The copyright holder has placed this preprint in the Public Domain. It is no longer restricted by copyright. Anyone can legally share, reuse, remix, or adapt this material for any purpose without crediting the original authors.'

Incentives

The system is changing currently towards more openness (thankfully)

Career goal:	Open Science	Open Training
Research PI / Professor	✓	✓
Lecturer*	✓	✓
Academic staff scientist	✓	✓
Industry engineer	✗	✗



In industry, secrecy plays a key role because of \$\$

Also this seems to be changing thanks to new business models...

* Note: this may differ depending on the country. In the US, lecturer is a career path, in Germany not really.

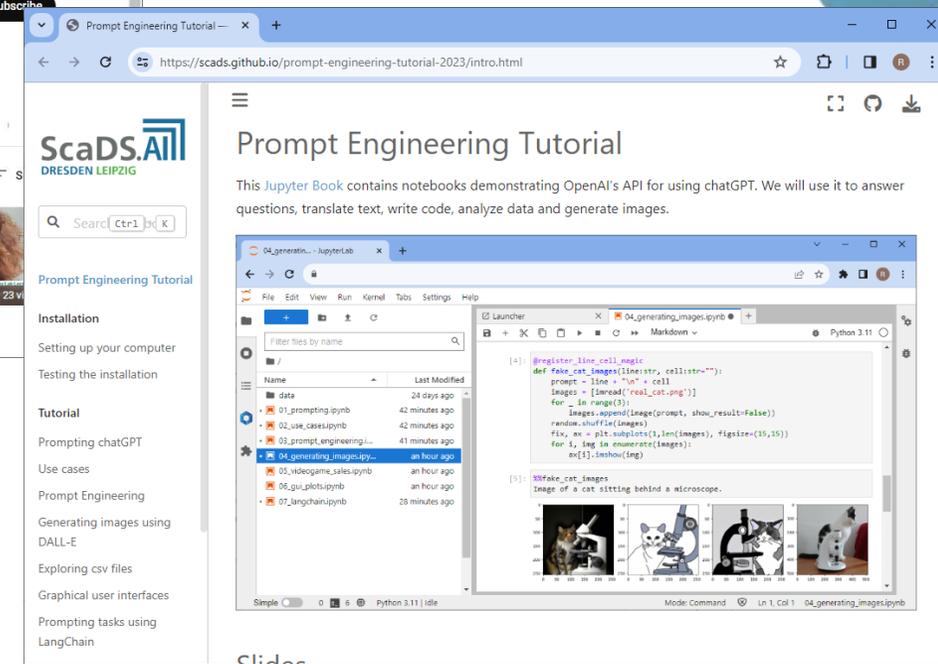
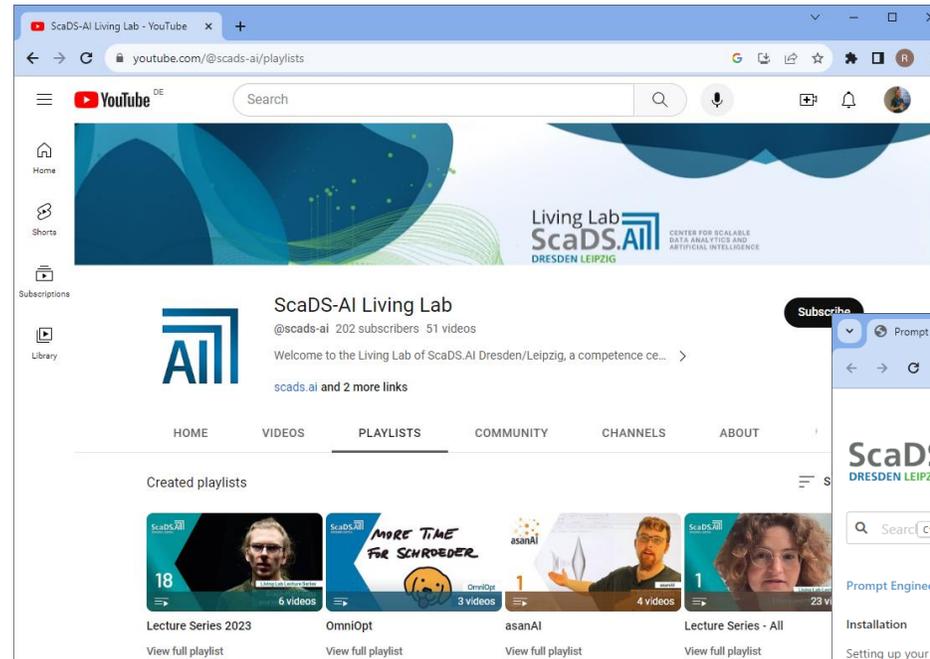
Incentives: Visibility

YouTube, Github,...

- Findable
- Accessible
- Interoperable
- Reusable

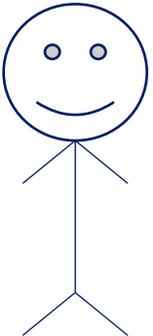
Open & FAIR Training
is a PR instrument

- ... leading to
- more course attendees
 - new collaborations



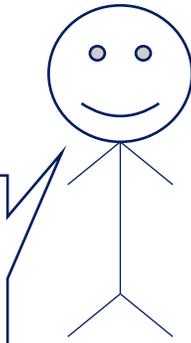
Incentives: Findability

Your *future-self* will thank you, because they will find your work

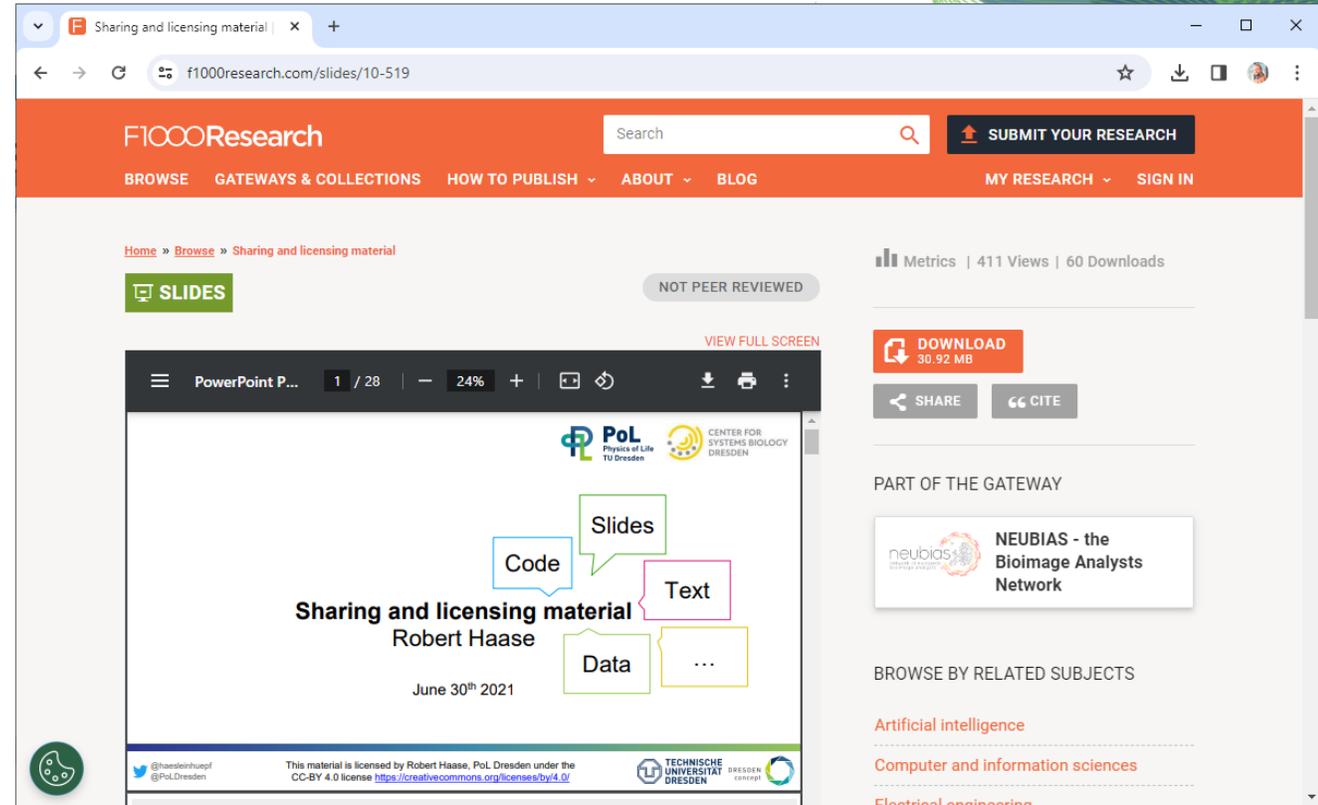


You remember that talk you gave in 2021?

Where are the slides?



Online, open access!



Sharing and licensing material | x +

f1000research.com/slides/10-519

F1000Research

Search

SUBMIT YOUR RESEARCH

BROWSE GATEWAYS & COLLECTIONS HOW TO PUBLISH ABOUT BLOG MY RESEARCH SIGN IN

Home » Browse » Sharing and licensing material

SLIDES

NOT PEER REVIEWED

VIEW FULL SCREEN

PowerPoint P... 1 / 28 24%

Code Slides Text Data ...

Sharing and licensing material
Robert Haase
June 30th 2021

Metrics | 411 Views | 60 Downloads

DOWNLOAD 30.92 MB

SHARE CITE

PART OF THE GATEWAY

neubias NEUBIAS - the Bioimage Analysts Network

BROWSE BY RELATED SUBJECTS

Artificial intelligence
Computer and information sciences
Electrical engineering

This material is licensed by Robert Haase, PoL Dresden under the CC-BY 4.0 license <https://creativecommons.org/licenses/by/4.0/>

TECHNISCHE UNIVERSITÄT DRESDEN

Incentives: Reusability

- Open Access -> Others teach how to use your tools & methods

The screenshot shows a slide presentation on the F1000Research platform. The slide title is "Interactive Image Data Flow Graphs and GPU-accelerated image processing for everyone" by Robert Haase. The slide content includes a 3D visualization of a cell with a network of green and purple lines. The slide is part of a 17-slide presentation. The F1000Research interface shows a search bar, navigation menu, and a "SUBMIT YOUR RESEARCH" button. The slide is marked as "NOT PEER REVIEWED". The metrics for this slide are 329 Views and 32 Downloads. The slide is part of the NEUBIAS - the Bioimage Analysts Network. The slide is also part of the Gateway. The slide is related to Artificial intelligence and Computer and information sciences. The slide is adapted from Robert Haase, PoL, TU Dresden.

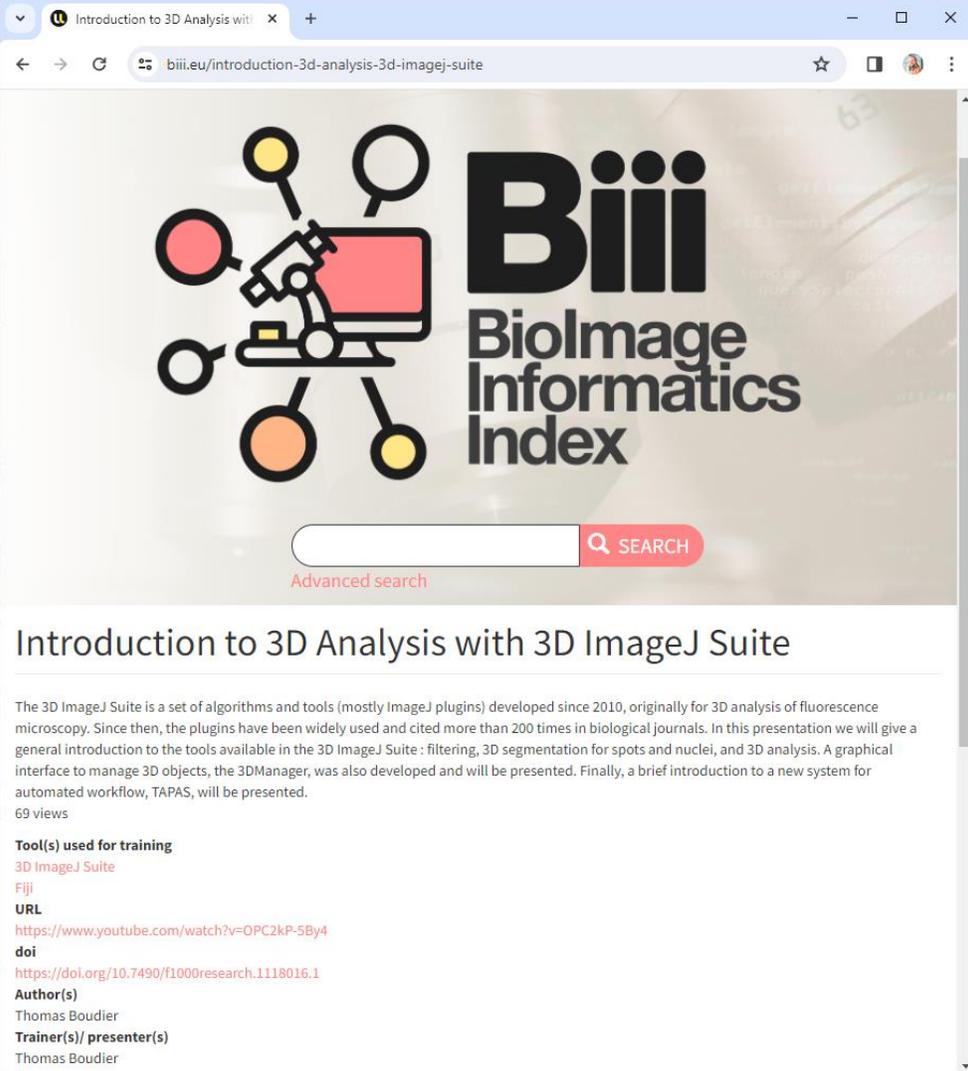
The screenshot shows a slide presentation on the F1000Research platform. The slide title is "Interactive Image Data Flow Graphs and reproducible GPU-accelerated image processing" by Martin Schätz. The slide content includes a 3D visualization of a cell with a network of green and purple lines. The slide is part of a 33-slide presentation. The F1000Research interface shows a search bar, navigation menu, and a "SUBMIT YOUR RESEARCH" button. The slide is marked as "NOT PEER REVIEWED". The metrics for this slide are 20 Views and 5 Downloads. The slide is part of the NEUBIAS - the Bioimage Analysts Network. The slide is also part of the Gateway. The slide is related to Artificial intelligence and Computer and information sciences. The slide is adapted from Robert Haase, PoL, TU Dresden.

The FAIR-principles

Findable

- F1. (Meta)data are assigned a globally unique and persistent identifier
- F2. Data are described with rich metadata (defined by R1 below)
- F3. Metadata clearly and explicitly include the identifier of the data they describe
- F4. (Meta)data are registered or indexed in a searchable resource

Hint: Do not invent a new search-engines for this ;-)



The screenshot shows a web browser window with the URL biii.eu/introduction-3d-analysis-3d-imagej-suite. The page features the BiII logo (Biolmage Informatics Index) and a search bar with a "SEARCH" button. Below the search bar, there is a section titled "Introduction to 3D Analysis with 3D ImageJ Suite" with a video player. The video description includes the following text:

The 3D ImageJ Suite is a set of algorithms and tools (mostly ImageJ plugins) developed since 2010, originally for 3D analysis of fluorescence microscopy. Since then, the plugins have been widely used and cited more than 200 times in biological journals. In this presentation we will give a general introduction to the tools available in the 3D ImageJ Suite : filtering, 3D segmentation for spots and nuclei, and 3D analysis. A graphical interface to manage 3D objects, the 3DManager, was also developed and will be presented. Finally, a brief introduction to a new system for automated workflow, TAPAS, will be presented.

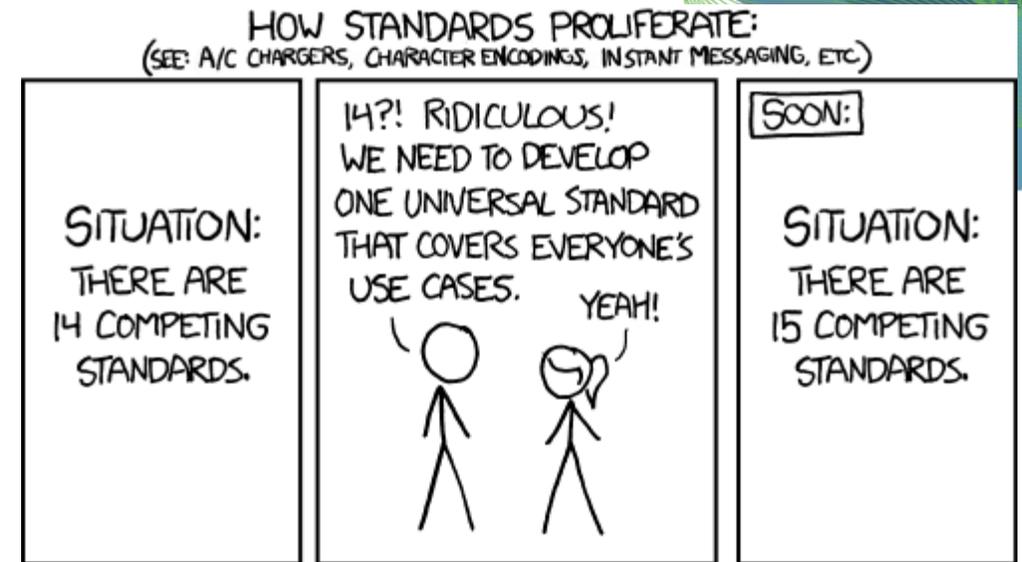
69 views

Tool(s) used for training
3D ImageJ Suite
Fiji
URL
<https://www.youtube.com/watch?v=OPC2kP-5By4>
doi
<https://doi.org/10.7490/f1000research.1118016.1>
Author(s)
Thomas Boudier
Trainer(s)/ presenter(s)
Thomas Boudier

The FAIR-principles

Accessible

- A1. (Meta)data are retrievable by their identifier using a standardised communications protocol
 - A1.1 The protocol is open, free, and universally implementable
 - A1.2 The protocol allows for an authentication and authorisation procedure, where necessary
- A2. Metadata are accessible, even when the data are no longer available



The FAIR-principles

Interoperable

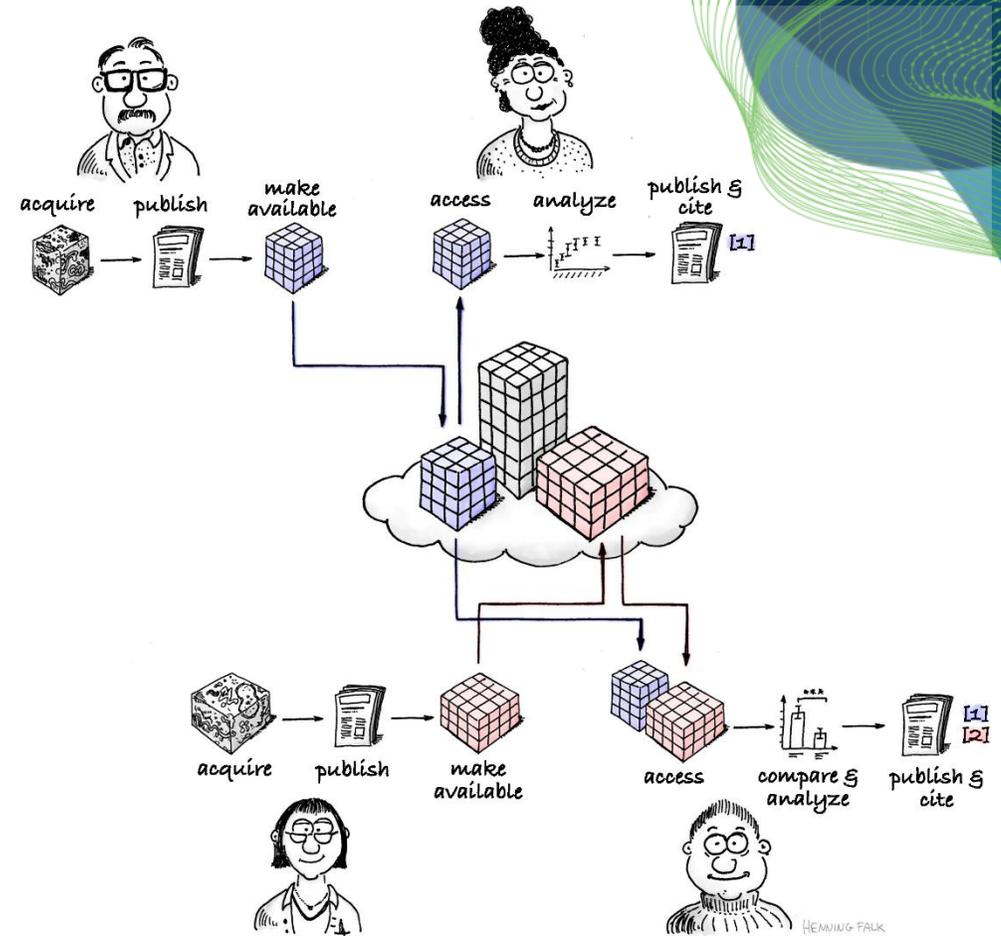
- I1. (Meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
- I2. (Meta)data use vocabularies that follow FAIR principles
- I3. (Meta)data include qualified references to other (meta)data



The FAIR-principles

Reusable

- R1. (Meta)data are richly described with a plurality of accurate and relevant attributes
- R1.1. (Meta)data are released with a clear and accessible data usage license
- R1.2. (Meta)data are associated with detailed provenance
- R1.3. (Meta)data meet domain-relevant community standards





Please use

CC-BY

as license for your materials to make them reusable.

Summary

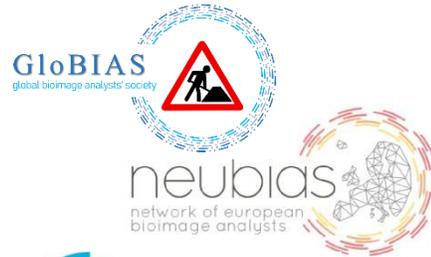
- If you want to make your stuff reusable:
 - Use permissive licenses
 - Share it on community-wide platforms (not institutional servers)
 - Register them in search-indices
- Read more:
 - Sharing on Zenodo
<https://focalplane.biologists.com/2023/02/15/sharing-research-data-with-zenodo/>
 - Sharing on Figshare
<https://focalplane.biologists.com/2023/07/26/sharing-your-poster-on-figshare/>
 - Collaborative work on github
<https://focalplane.biologists.com/2021/09/04/collaborative-bio-image-analysis-script-editing-with-git/>
 - Licensing
<https://focalplane.biologists.com/2023/05/06/if-you-license-it-itll-be-harder-to-steal-it-why-we-should-license-our-work/>



<https://doi.org/10.5281/zenodo.10654775>

Acknowledgements

Communities & platforms

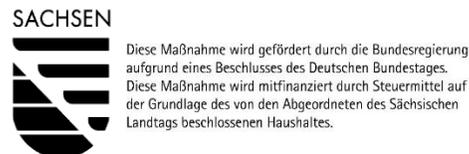


BiAPoL team

- Marcelo Zoccoler
 - Johannes Soltwedel
 - Maleeha Hassan
 - Till Korten
 - Stefan Hahmann
 - Somashekhar Kulkarni
- Former lab members:
- Ryan George Savill
 - Laura Zigutyte
 - Mara Lampert
 - Allyson Ryan
 - Conni Wetzker



Funding



**Chan
Zuckerberg
Initiative**

DFG Deutsche Forschungsgemeinschaft

Some Figures were generated using

