NUMFOCUS 10 YEARS

A DECADE OF SUPPORTING OPEN SCIENCE

August 2022 Newsletter

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We hope this finds you well as the Summer begins to wind down. We're also happy to share that the SciPy Conference will now be a NumFOCUS event starting with SciPy 2023! You can read more about the transition in this blog post!

Open Source .Science

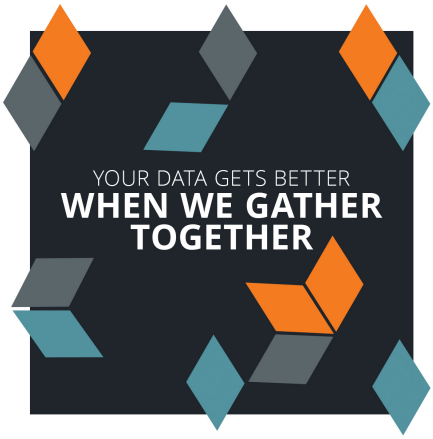
Announcing OSSci

NumFOCUS, IBM, and partner academic institutions are launching the Open Source Science Initiative (OSSci). This impressive NumFOCUS program prioritizes the place of open source software (OSS) in scientific discovery.

Learn more

Events Update

PyData Global will be returning December 1-3! We hope you can join us for the third installment of this online event that brings together the global PyData community network across the globe. The Call for Proposals is open, and the deadline to submit is September 12.



We're also very excited to share the news that there will be a PyData Miami on Sept. 22 and PyData NYC is returning this fall, November 9-11. Tickets for PyData NYC are now available (Early Bird close on September 5). The Call for Proposals is open through August 24.

The inaugural PyData Tel Aviv will take place on December 12. Stay tuned to our social media channels as we release more information on these upcoming events!

Lastly, we previously had announced the NumFOCUS Open Science Community Summit. Unfortunately, due to a scheduling conflict, we will

postpone this event until 2023. We'll share more information as it becomes available, so stay tuned!

Thank you to our Corporate Sponsors for their ongoing support

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Sponsored Project Announcements

Bokeh

Bokeh is preparing for a major release in August and will announce updates on the Bokeh blog and social media channels.
Bokeh participated in the alt-text sprint at SciPy. The relevant PR will stay open for a couple more weeks, and contributions are welcome!

Julia

- JuliaCon 2022 took place from July 27-29, and it was another successful year of the conference! You can view the YouTube playlist here.
- At JuliaCon 2022, the winners of the Julia Community prize were announced.
- Julia would also like to express gratitude to the JuMP Dev community who co-located their annual conference with JuliaCon again this year. JuMP had a dedicated track that brought together even more of the Julia ecosystem.
- The Julia community recently launched a new platform to find and write Julia content: https://forem.julialang.org.

Matplotlib

Announcing Python Software Foundation Fellow Members for Q2 2022! Matplotlib wishes to welcome the new PSF Fellows for Q2.

MDAnalysis

Releases
New 2.2.0 release including Apple M1 packages (and they wish to extend a thank you to conda-forge).

- MDAnalysis took over stewardship over the panedr repository, a specialized library to read a specific data format produced by the widely used GROMACS molecular dynamics package. panedr will become a dependency of MDAnalysis as part of one of the current GSoC projects.

Events

- Two workshops were held in the UK.
- Two MDAnalysis developers presented at Scipy 2022 and engaged with other NumFOCUS projects and the wider community!

Hiring update

Applications are still being accepted for “Postdoctoral Research Scholar in Extensible Molecular analysis tools for reproducible science” at Arizona State University (CZI EOSS4 project). To learn more about the position and to apply, please click here. This is a 12 month position and can be performed remotely.

NumPy

Releases

The NumPy team is pleased to announce the release of NumPy 1.23.0rc2. The NumPy 1.23.0 release continues the ongoing work to improve the handling and promotion of types, increase the execution speed, clarify the documentation, and expire old deprecations.

Release highlights:

- Implementation of ``loadtxt`` in C, greatly improving its performance.
- Exposing DLPack at the Python level for easy data exchange.
- Changes to the promotion and comparisons of structured dtypes.
- Improvements to f2py.

The Python versions supported in this release are 3.8-3.10, 3.11 will be supported when it comes out. Note that 32 bit wheels are only provided for Windows, all other wheels are 64 bits on account of Ubuntu, Fedora, and other Linux distributions dropping 32 bit support. All 64 bit wheels are also linked with 64 bit OpenBLAS. Wheels can be downloaded from PyPI; source archives, release notes, and wheel hashes are available on Github.

OpenFHE

As mentioned in the last newsletter edition, PALISADE is now OpenFHE, and there has been an official public release!

OpenFHE is a next-gen open-source homomorphic encryption library that merges several previous open-source FHE libraries. OpenFHE supports all of the major post-quantum FHE schemes. This means OpenFHE even protects against nation-state quantum computing attacks. OpenFHE also includes a native Hardware Abstraction Layer (HAL) to natively leverage commercial hardware accelerators for greater performance when needed.

You can find the project webpage with extensive links to documentation and supporting material at https://www.openfhe.org!

Like PALISADE, OpenFHE is officially affiliated with the non-profit

NumFocus open source consortium as a fiscally sponsored project. OpenFHE is a culmination of years of effort and expertise in designing, developing, applying, and deploying Fully Homomorphic Encryption (FHE) in real-world scenarios and is the result of extensive collaboration between researchers, scientists, and engineers from Duality, Intel, Samsung, MIT, and over a decade of support from DARPA. OpenFHE is available on the 2-clause BSD open-source library, and it will ALWAYS be open-source.

OpenFHE wishes to welcome new members and contributors to the community. Please subscribe to the Google mailing list for OpenFHE project announcements or join the discourse forum.

PyMC

Releases
PyMC released version 4.1.3, and the full changelog is available for reference.

Events
PyMC and Data Umbrella have organized a series of open source working sessions. For more details, instructions, and how to participate, see the July 2022 PyMC OS Working Sessions website.

Videos

- PyMC Meetup: PyMC, Aesara and Aeppl: The New Kids on The Block (Ricardo Vieira)
- Tutorial from PyData London 2022: Probabilistic Python: An Introduction to Bayesian Modeling with PyMC (Chris Fonnesbeck)
- Presentation from PyData London 2022: Solving Real-World Business Problems with Bayesian Modeling (Thomas Wiecki)

Blog Post

- Meet our 2022 PyMC Google Summer of Code Students
- Dev Sprint: Getting the PyMC v4.0 Release Out
- What if? Causal inference through counterfactual reasoning in PyMC

SciPy

Releases
SciPy 1.9.0 was released!

Release highlights:

- This has modernized the SciPy build system to use meson, substantially improving build performance and providing better build-time configuration and cross-compilation support.
- Added scipy.optimize.milp, new function for mixed-integer linear programming
- Added scipy.stats.fit for fitting discrete and continuous distributions to data
- Tensor-product spline interpolation modes were added to scipy.interpolate.RegularGridInterpolator
- A new global optimizer (DIviding RECTangles algorithm) scipy.optimize.direct.

Grants
SciPy has recently been awarded a Small Development Grant from NumFOCUS to work on Faster Random Variate Sampling from SciPy Statistical Distributions.

Events
At SciPy 2022, several SciPy contributors made presentations, met for the first time, and hosted a sprint, during which ~10 new SciPy contributors submitted their first PRs

SciPy has recently hit 10k stars on GitHub! If you haven't already, please add your star to the SciPy repository and help show how large the community is!

Stan

Stan is having an open call for StanConnect event proposals and is currently looking for those interested in coordinating an event with the help of members of the Stan Governing Body. Topics can be centered around a community, such as Stan for Ecology, or around a specific modeling framework, as broad or narrow as that may be.

StanConnect events will be hosted online to ease with recording of the sessions. If you are interested or simply want to learn a bit more about what organizing a StanConnect event might entail, please reach out to board@mc-stan.org.

Zarr

- ZEP0001 is open for review and Zarr looking to build consensus from the Zarr Community. If you use Zarr in any way, please have a look and provide your feedback.
- Read the latest blog post: Zarr EOSS4 Roadmap! Feedback and suggestions are welcome.
- Zarr is also looking to showcase #ZarrData on the Zarr website: https://zarr.dev/. If you have something interesting, please let the project know!

Affiliated Project Announcements

CuPy

CuPy v11 was released on July 28th. This major update includes support for ndarray subclassing, a unified binary package for CUDA 11.2+, Arm servers & JetPack 5 support, distributed sparse matrices, and increased NumPy & SciPy API coverage, and more! Read more on the CuPy blog.

CVXPY

GSoC
Progress on benchmarks and new modeling functionality for quantum information applications.

Grants
A $4,000 grant was received to revamp the website; we're looking for a web developer! Use Discord or email the project if you're interested in learning more or know someone who might be!

Events
CVXPY gave a tutorial at SciPy 2022 and presented CVXPY, cvxpylayers, and CVXPYgen at ICCOPT 2022.

GNU Radio

For those interested in SDR or who want to learn more about RF signal processing, the annual GNU Radio conference is approaching, Sept 26-30, in Washington DC. Registration is open: https://events.gnuradio.org/event/18/.

Mesa

With Mesa 1.0 released, a strategy session followed to think about the project's development holistically. Integrated with the discussion was looking at a Mesa-based COVID model from the National Center for Supercomputing Applications.

Takeaways and themes from the Mesa strategy discussion:

- Develop the Mesa Community: How does Mesa grow a more robust and resilient community? This question also brought up the discussion of how open source libraries grow and develop, and Mesa wants to conduct research along these lines.

Some suggested avenues:

- Continue to engage with institutions we have relationships with TUDelft, U. Mary Washington, George Mason, and developing with U. of Illinois Urbana-Champagne.
- Engage more heavily with NumFOCUS and learn from other successful projects.
- Engage with organizations such as RSE!

TNL - Template Numerical Library

The TNL project has migrated its Git repository to the public Gitlab.com instance: https://gitlab.com/tnl-project/tnl. This simplifies contributing to the project, which is, of course, very encouraged. The original repository was set to read-only mode, so you need to re-clone your local repository or update the URL.

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