



Scientific Open Source Software: sustainability is about more than code

Fernando Pérez

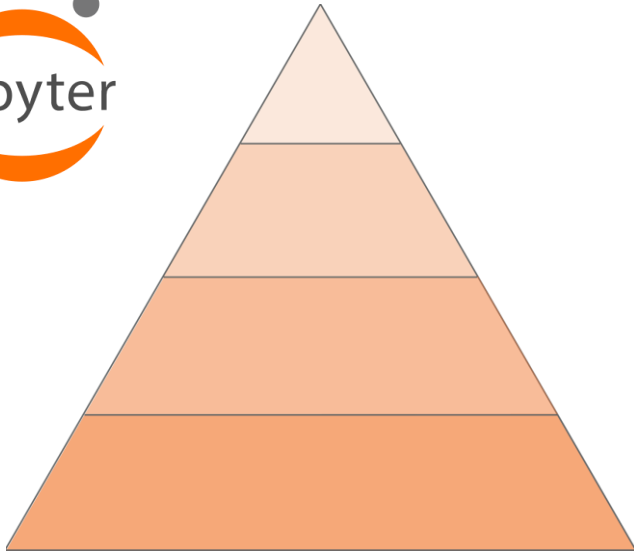
These slides: <https://bit.ly/ostp-sust>



University of California, Berkeley
DEPARTMENT OF STATISTICS



OSS: more than software

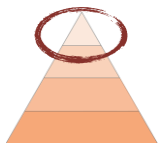


Services and content

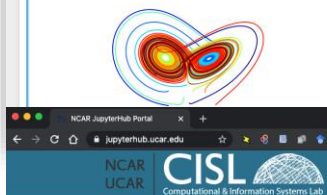
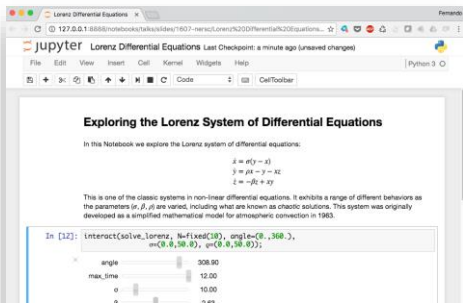
(Extensible) Software

Standards and Protocols

Community



Content/Services



Available NCAR Resources

Cheyenne Supercomputer

Casper DAV

Martin Skarzynski
@marskar

My recent slides:

#DataScience 101:

- @mybinderteam: mybinder.org/v2/gh/marskar/...
- @GitHub pages: marskar.github.io/ds101
- @ProjectJupyter: [nbviewer: nbviewer.jupyter.org/format/slides/...](https://nbviewer.jupyter.org/format/slides/...)



Computational and Inferential Thinking

The Foundations of Data Science

By **Ani Adhikari** and **John DeNero**

Contributions by **David Wagner** and **Henry Milner**

This is the textbook for the Foundations of Data Science class at UC Berkeley.

[View this textbook online on GitHub Pages.](#)

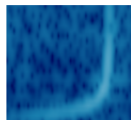
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This page was created by [The Jupyter Book](#) using [Jupyter Book](#).

LIGO VIRGO

Gravitational Wave Open Science Center

Quickview Notebook

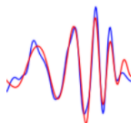


Discover, read, and plot gravitational wave data

Run: [Google Colab](#) | [mybinder](#)

Download: [github](#)

Guide to GW detections and noise



Code from "A guide to LIGO-Virgo detector noise and extraction of transient gravitational wave signals"

Code used to produce paper: [github](#)

Jupyter notebook to illustrate methods used to produce key figures: [github](#) | [Google Colab](#) | [mybinder](#)

Jupyter

nbviewer

A simple way to share Jupyter Notebooks

Enter the location of a Jupyter Notebook to have it rendered here:

URL | GitHub username | GitHub username/repo | Gist ID

Go!

Programming Languages

Python | Ruby | Julia

IP[y]: IPython Interactive Computing

python

Julia

Julia

binder (beta)

Turn a Git repo into a collection of interactive notebooks

Have a repository full of Jupyter notebooks? With Binder, open those notebooks in an executable environment, making your code immediately reproducible by anyone, anywhere.

Build and launch a repository

GitHub repository name or URL

GitHub repository name or URL

GitHub

Git branch, tag, or commit

Git branch, tag, or commit

Path to a notebook file (optional)

Path to a notebook file (optional)

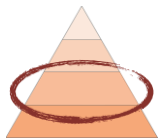
File

launch

Copy the URL below and share your Binder with others:

Fill in the fields to see a URL for sharing your Binder.

Copy the text below, then paste into your README to show a binder badge: [launch binder](#)



A language agnostic protocol

 **Scala**

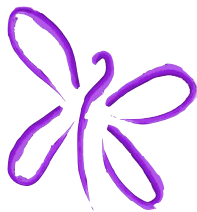


 **perl**



 **julia**

 **ERLANG**



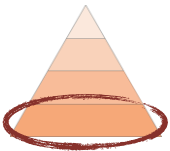
 **Spark**



 **python**TM IP[y]:
IPython



~100 different kernels: <https://github.com/jupyter/jupyter/wiki/Jupyter-kernels>



Community: formalized governance



Me :)

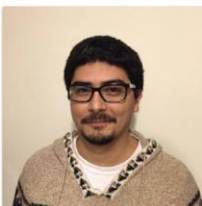


Brian Granger
Cal Poly, Amazon



Steering Council

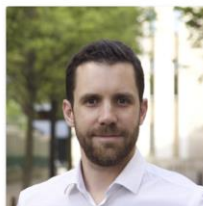
The role of the Jupyter Steering Council is to ensure, through working with and serving the broader Jupyter community, the long-term well-being of the project, both technically and as a community. The Jupyter Steering Council currently consists of the following members (in alphabetical order).



Damian Avila
Anaconda, Inc.
[@damianavila](#) on GitHub



Matthias Bussonnier
UC Merced
[@Carreau](#) on GitHub



Sylvain Corlay
QuantStack
[@sylvaincorlay](#) on GitHub



Institutional Partners

Institutional Partners are organizations that support the project by employing Jupyter Steering Council members. Current Institutional Partners include:



Sponsors

Project Jupyter receives direct funding from the following sources:

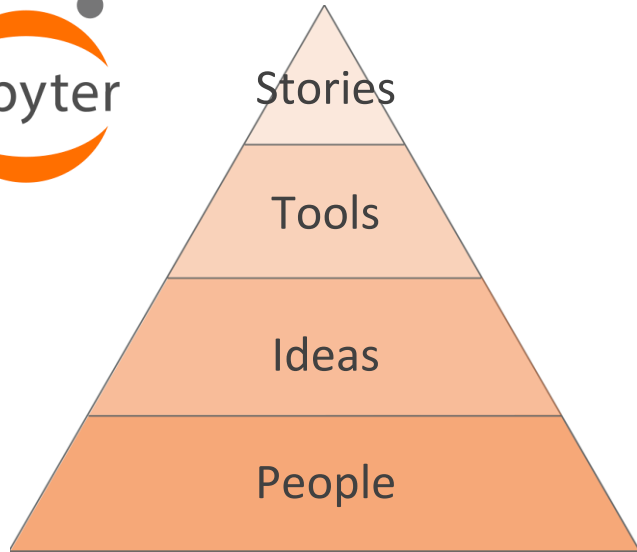


SCHMIDT FUTURES

Formal fiscal sponsorship



More than software, woven into science



Services and content: **end-user impact**

Software

Standards and Protocols: **ecosystem**

Community: **innovation & resiliency**

OSS today: beyond code & licenses

- Fluid, iterative
 - Design evolves through usage
- Two-way dialog
 - Users are contributors/developers.
- Multi-stakeholder
 - Academia, govt, **industry**, volunteers...
- Open beyond licensing
 - Governance, project management, design...

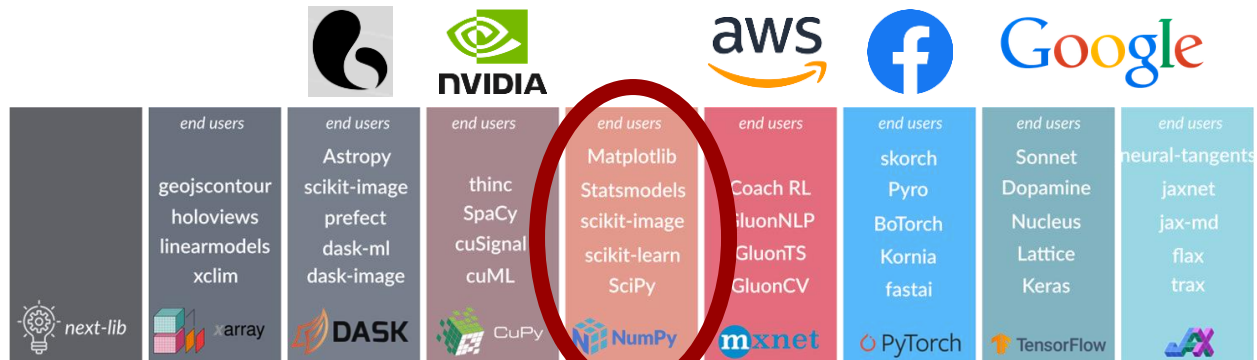
Interactive Notebooks



Science/education
at the OSS table

N-dimensional arrays and tensors

Interoperable
ecosystems need all
stakeholders to
have a voice



Federal funding/strategy **can** contribute to
sustainable Scientific OSS

**Support new roles, communities and
organizations**

Different from traditional PI-centric teams!

"Any opinions, findings, conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Networking and Information Technology Research and Development Program."

The Networking and Information Technology Research and Development
(NITRD) Program

Mailing Address: NCO/NITRD, 2415 Eisenhower Avenue, Alexandria, VA 22314

Physical Address: 490 L'Enfant Plaza SW, Suite 8001, Washington, DC 20024, USA Tel: 202-459-9674,
Fax: 202-459-9673, Email: nco@nitrd.gov, Website: <https://www.nitrd.gov>

