

Particles, Universe, NuClei and Hadrons for the NFDI

Punch Lunch:

Analysis Platforms in the PUNCH Sciences

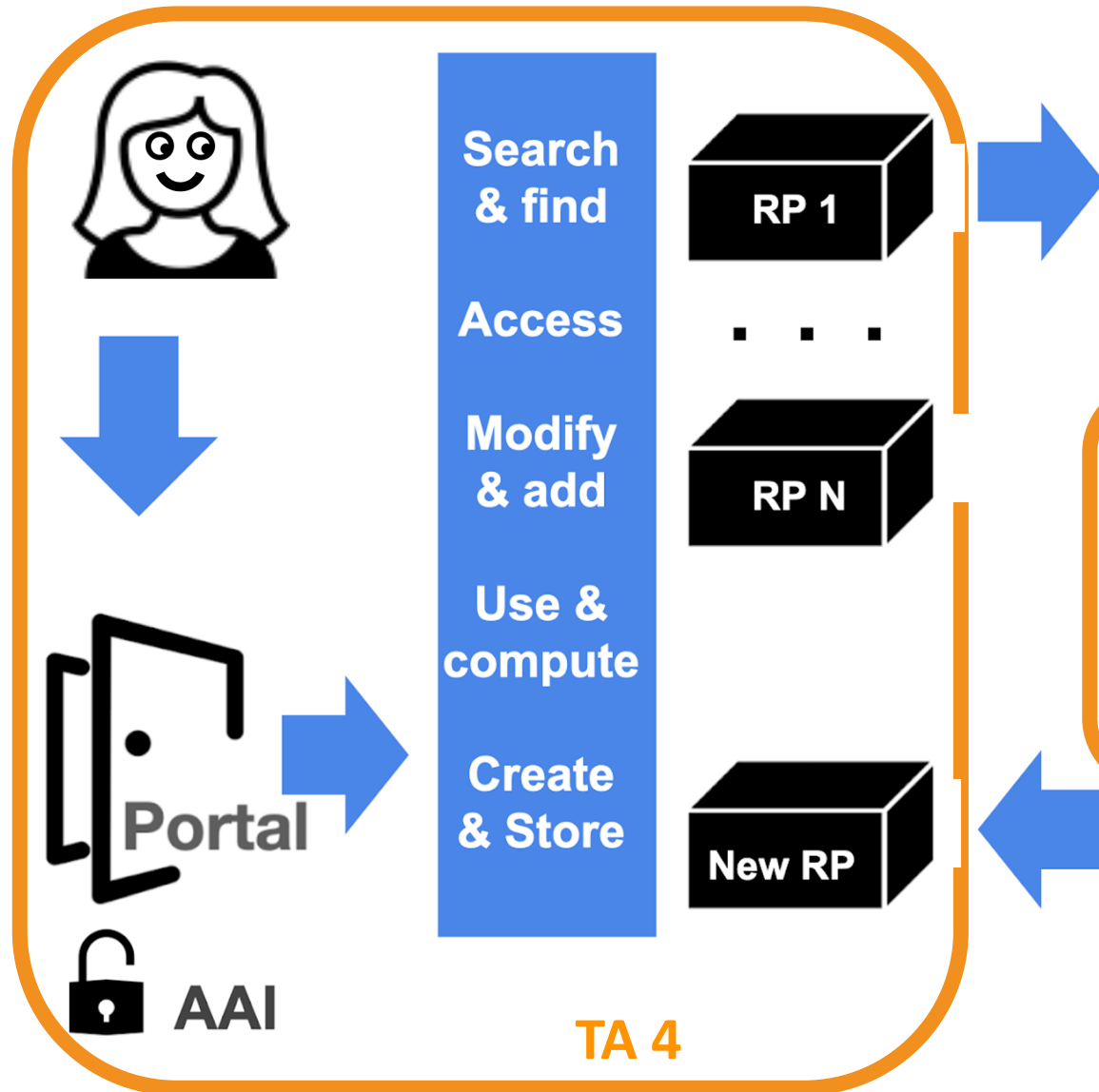
Harry Enke

Portal, Research Product, Workflows



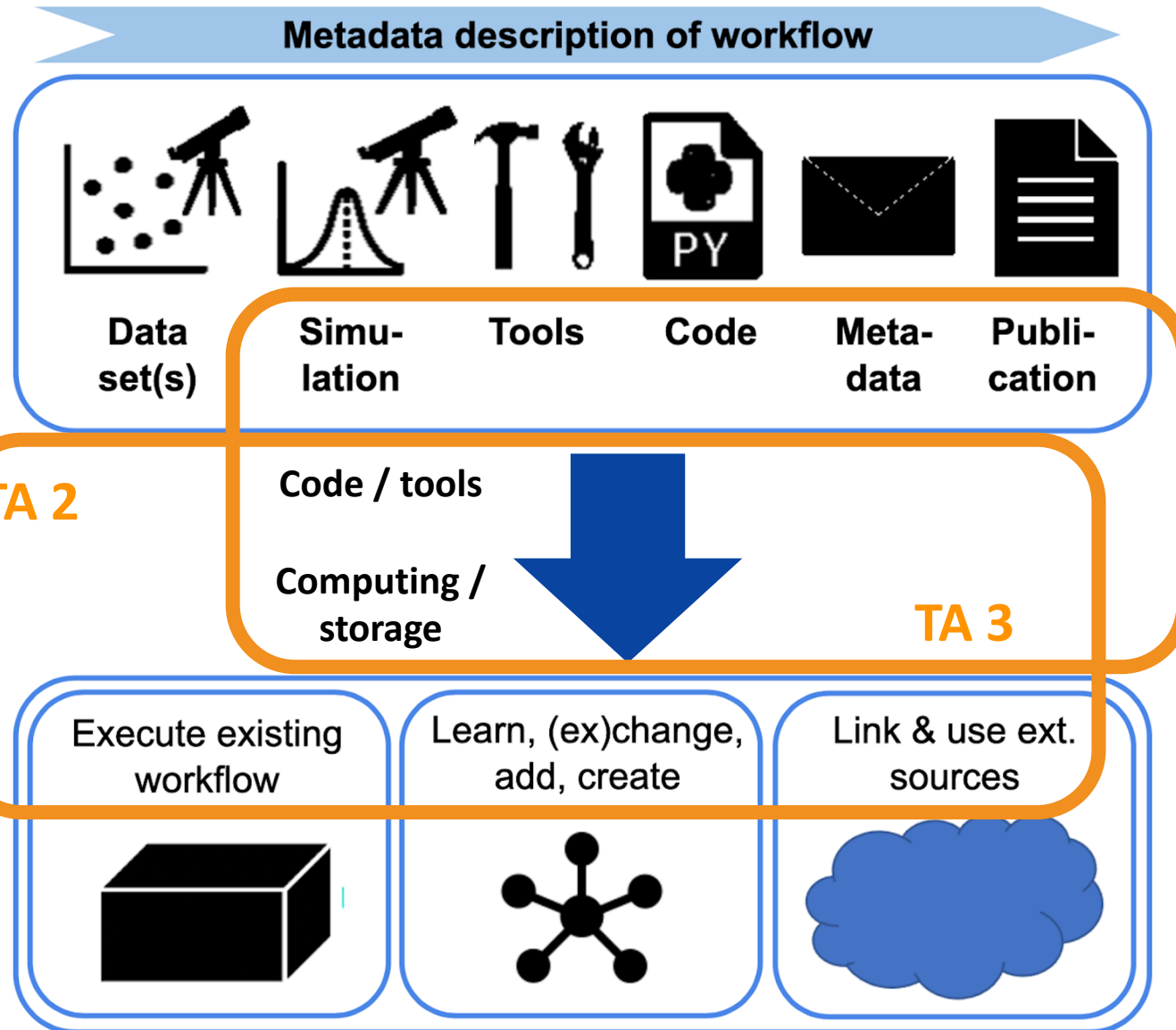
PUNCH-SDP

The science data platform for RPs



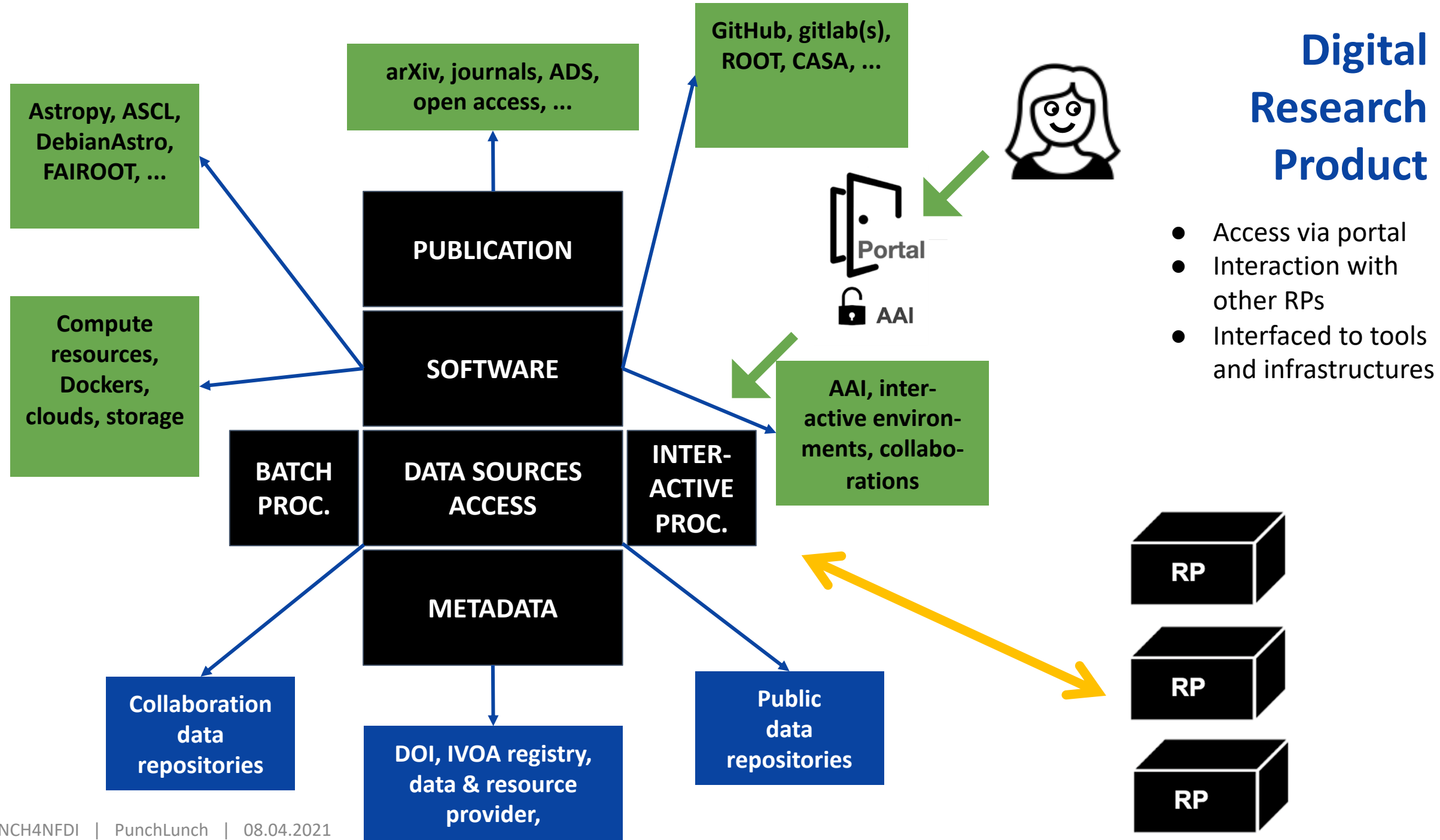
TA 4

Research product contains executable workflow

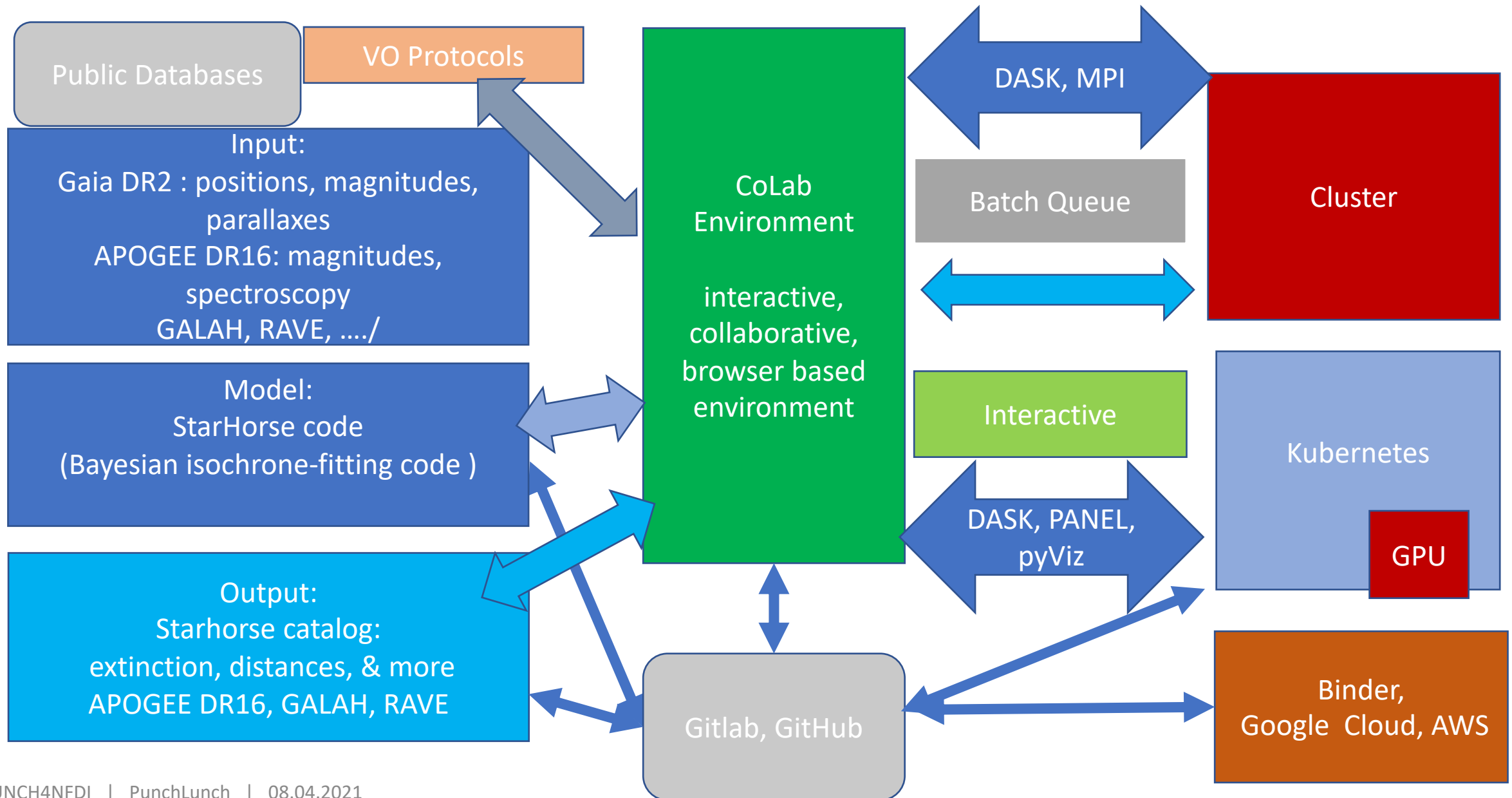


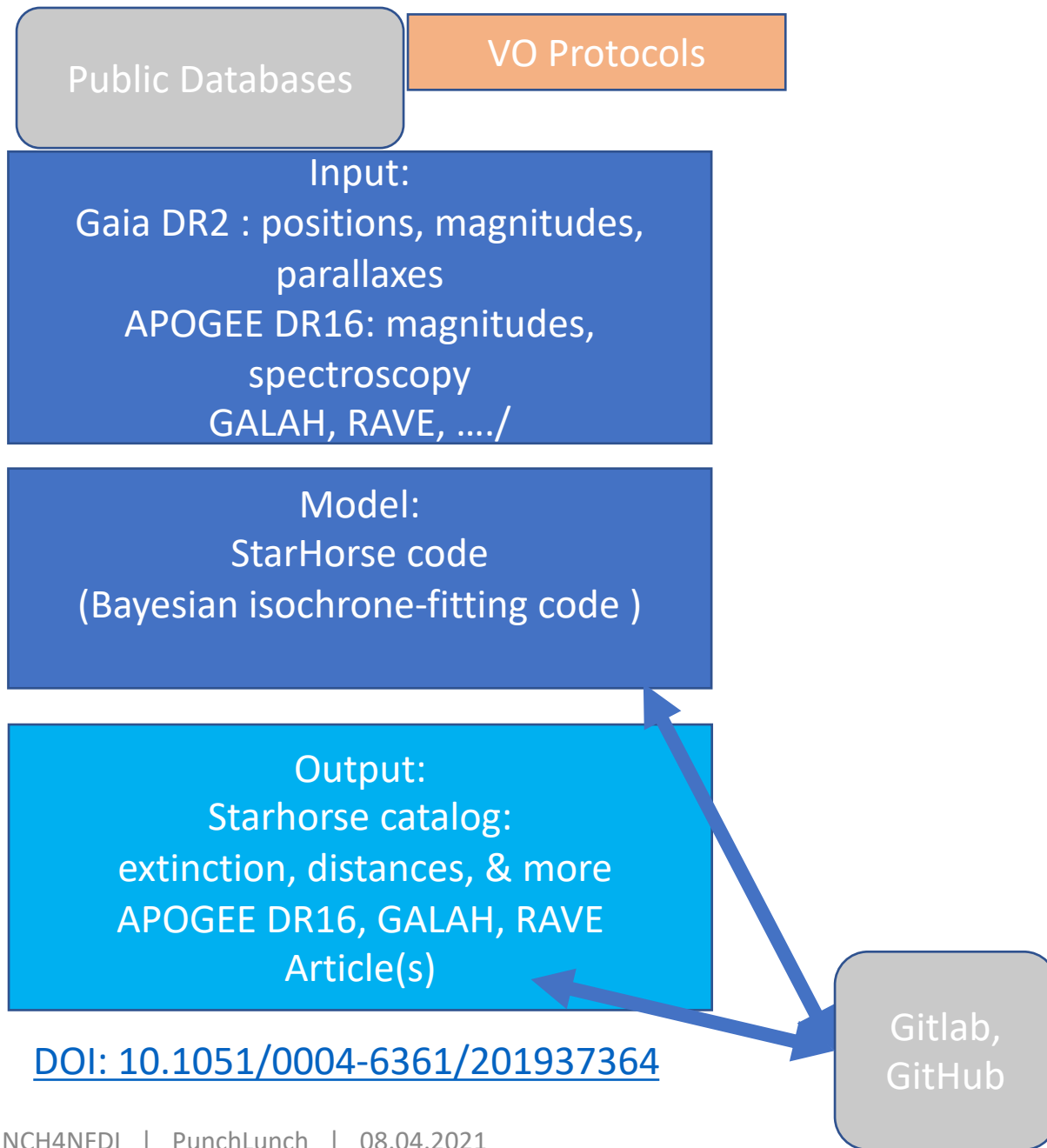
Many options for the user

Digital Research Product



Example workflow: Obtaining photo-astrometric distances





Public Databases :

Access: URL , webinterface, SQL, commandline API
Data Identifier: DOI, PID , HealPix, ...
Usage: Select datasets, retrieve by VO protocol (TAP)
Documentation: Articles, DataCite records, VO metadata

Model:

Access: URL , webinterface, Code Versioning Systems, (github, gitlab)
Data Identifier: (DOI, PID) , URL, Code Version
Usage: retrieve via CVS or tarball
Documentation: Articles, Code documentation
restricted access to code

Output:

Database tables, Publication, adapted Code in gitlab
Data Identifier: DOI, URL, Code Version + Url
Usage: public av. database table, gitlab repo
runtime for interactive use (docker/binder)
Documentation: Article, Code documentation
public access to data tables:
StarHorse Catalog, DOI: [10.17876/gaia/dr.2/52](https://doi.org/10.17876/gaia/dr.2/52):

CoLab Environment (interactive):

Access: webinterface, Authentication (AAI)

Capabilities: collaboration of (authenticated) users,

jupyter notebook, LaTeX, shell,
chat

Available environments (linux based):

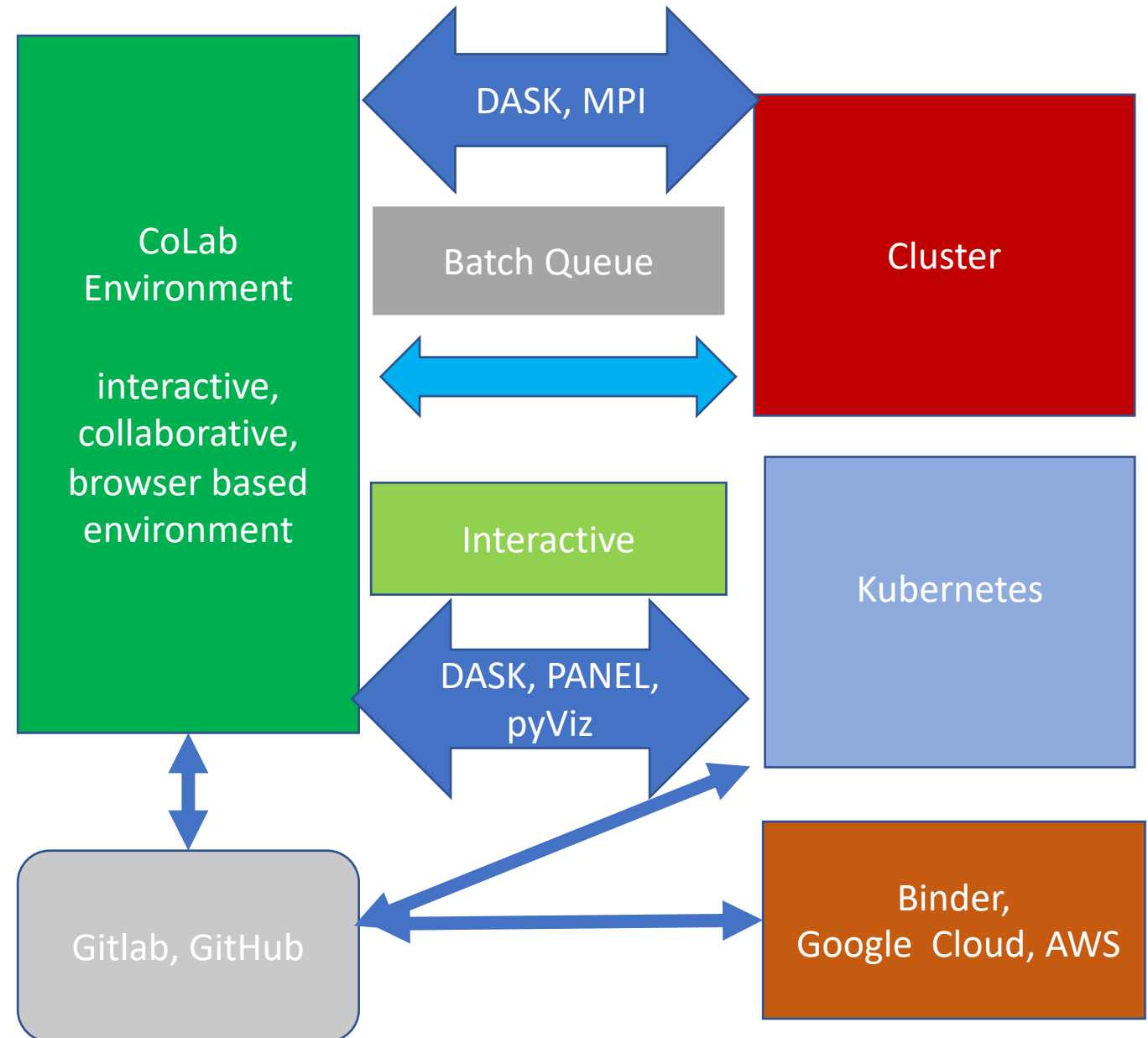
Python Kernels (customized) , R,

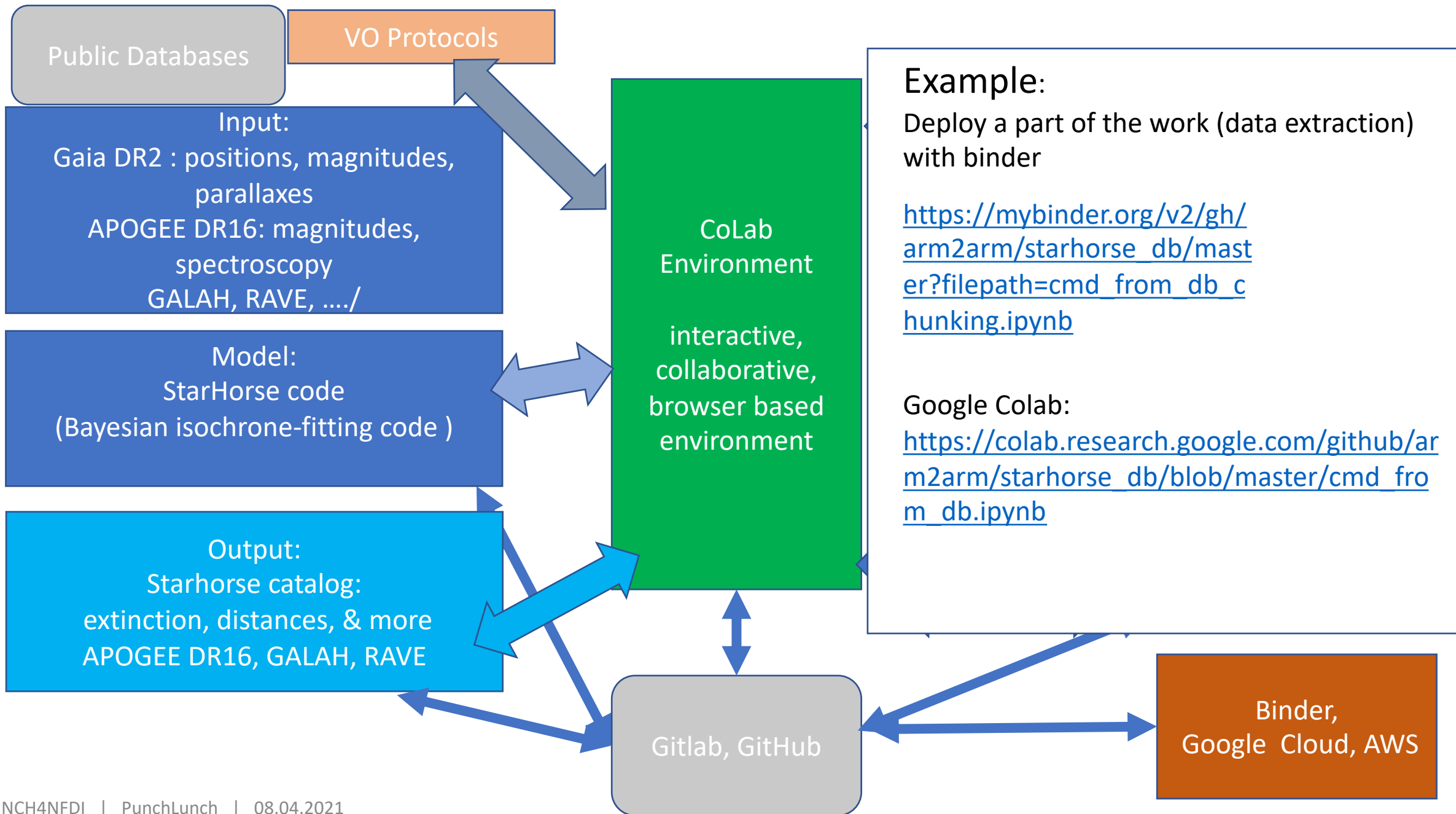
Usage: Prepare datasets (conversion, selection),
develop code, test runs,
submit to cluster queue,
use interactive access to GPU
graphical evaluation of results,
write paper, (include graphs)

Documentation: gitlab, github,

Code documentation, article

<https://colab.aip.de> built with license from
[Sagemath](#)



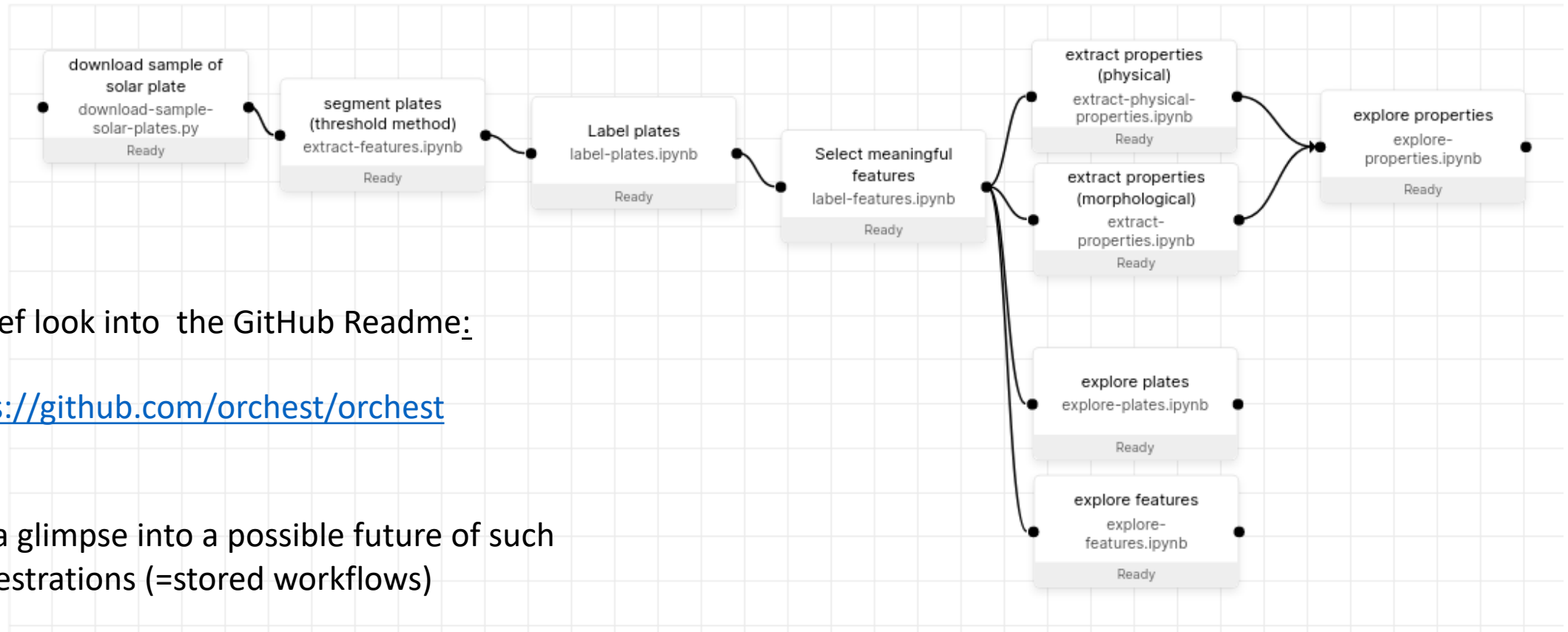


Organising workflow elements

✓ ml_solar_plates

One of the promising Open Source code developments is ORCHEST:

AIP: application to a sunspot extraction pipeline



A brief look into the GitHub Readme:

<https://github.com/orchest/orchest>

... is a glimpse into a possible future of such orchestrations (=stored workflows)