Reproducibility crisis

https://www.nature.com/news/1-500-scientists-lift-the-lid-on-reproducibility-1.19970
My Python environment has become so degraded that my laptop has been declared a superfund site.
The four questions

where is the **data**?
EOS, local hard drive...

where is the **code**?
GitLab, local copy...

where is the **environment**?
my own computer, lxplus...

where is the **workflow**?
I remember it, bash script, readme...
Architecture

- Multiple **compute backends**: Kubernetes, HTCondor (Slurm next to be integrated)
- Different **storage backends**: 
- Different **workflow languages** which offer from simple pipelines to complex map-reduce operations
Toy example
The CLI

(reana) → reana-demo-root6-roofit git:(experimental) reana-client ping
(reana) → reana-demo-root6-roofit git:(experimental) reana-client run -n demo-roofit
[INFO] Creating a workflow...
demo-roofit.1
[INFO] Uploading files...
File code/gendata.C was successfully uploaded.
File code/fitdata.C was successfully uploaded.
[INFO] Starting workflow...
demo-roofit.1 is running
(reana) → reana-demo-root6-roofit git:(experimental) reana-client status -w demo-roofit
NAME RUN_NUMBER CREATED STATUS PROGRESS
demo-roofit 1 2019-09-18T11:05:52 running 0/3
(reana) → reana-demo-root6-roofit git:(experimental) reana-client status -w demo-roofit
NAME RUN_NUMBER CREATED STATUS PROGRESS
demo-roofit 1 2019-09-18T11:05:52 finished 3/3
(reana) → reana-demo-root6-roofit git:(experimental) reana-client download -w demo-roofit
File results/plot.png downloaded to /Users/rodrigdi/code/reanahub/reana-demo-root6-roofit
(reana) → reana-demo-root6-roofit git:(experimental) open results/plot.png
(reana) → reana-demo-root6-roofit git:(experimental) □
The Notebook interface

(reana) ➜ reana-demo-worldpopulation git:(master) reana-client run -n worldpopulation
[INFO] Creating a workflow...
worldpopulation.1
[INFO] Uploading files...
File code/worldpopulation.ipynb was successfully uploaded.
File data/World_historical_and_predicted_populations_in_percentage.csv was successfully uploaded.
[INFO] Starting workflow...
worldpopulation.1 is running
(reana) ➜ reana-demo-worldpopulation git:(master) reana-client open jupyter -w worldpopulation
GitLab integration
data + code + environment + workflow = 🎉
WE WANT YOU!

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