

Presentation Title

Felix Hoffmann

felix11h.dev@gmail.com

November 13, 2014



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

Spectrum of Reproducibility

... in Computational Research

x

Spectrum of Reproducibility

... in Computational Research

x

reproduction from
descriptions in
research article

Spectrum of Reproducibility

... in Computational Research

x

reproduction from
descriptions in
research article

Tough!

Spectrum of Reproducibility

... in Computational Research

x

reproduction from
descriptions in
research article

same code,

Tough!

Spectrum of Reproducibility

... in Computational Research

x

reproduction from
descriptions in
research article

same code,
same machine,

Tough!

Spectrum of Reproducibility

... in Computational Research

x

reproduction from
descriptions in
research article

same code,
same machine,
same researcher

Tough!

Spectrum of Reproducibility

... in Computational Research

x

reproduction from
descriptions in
research article

Tough!

same code,
same machine,
same researcher

Easy!

Spectrum of Reproducibility

... in Computational Research

x

reproduction from
descriptions in
research article

Tough!

same code,
same machine,
same researcher

Easy! if only!

Spectrum of Reproducibility

... in Computational Research

x

reproduction from
descriptions in
research article

Tough!

same code,
~~same machine,~~
same researcher

Easy! if only!

Spectrum of Reproducibility

... in Computational Research

x

reproduction from
descriptions in
research article

Tough!

same code,
same machine,
same researcher

Easy! if only!

The problems...

Which version of my
code did I use?

The problems...

Which version of my
code did I use?

What parameters?

The problems...

Which version of my
code did I use?

What parameters?

“It worked yesterday.”

The problems...

Which version of my
code did I use?

What parameters?

“It worked yesterday.”

“Why did I do that?”

The problems...

... the solution

Which version of my
code did I use?

What parameters?

“It worked yesterday.”

“Why did I do that?”

... the solution

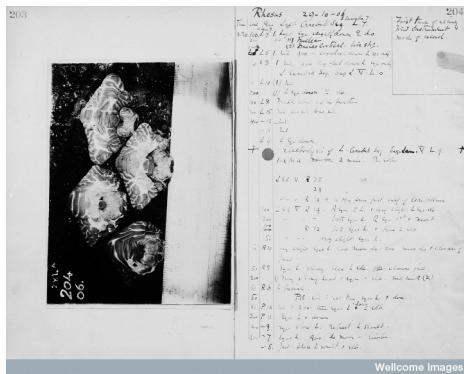
laboratory notebook

Which version of my code did I use?

What parameters?

"It worked yesterday."

“Why did I do that?”



The problems...

... the solution

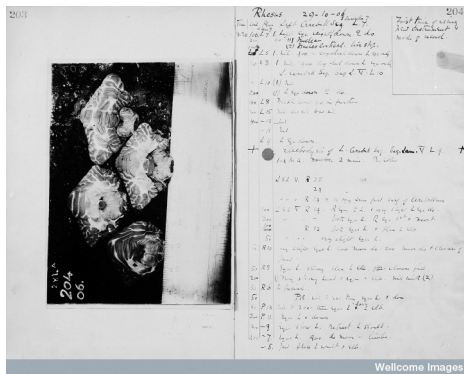
laboratory notebook

Which version of my code did I use?

What parameters?

"It worked yesterday."

"Why did I do that?"



... in traditional experiment based research.

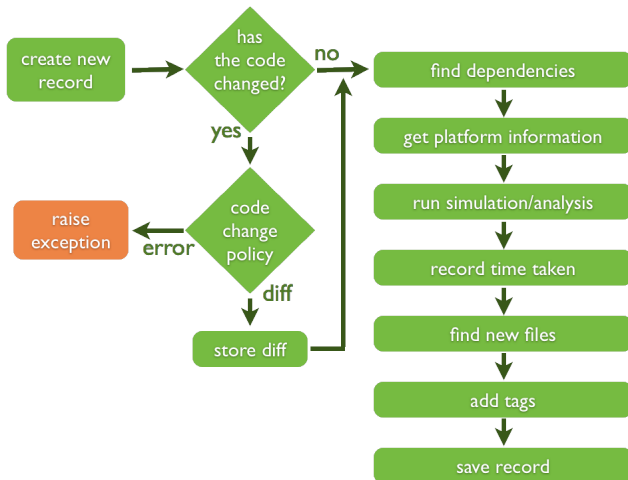
Sumatra - Simulation Management Tool

Sumatra - Simulation Management Tool

*“An automated lab notebook for
computational projects”*

Sumatra - Simulation Management Tool

*"An automated lab notebook for
computational projects"*



Sumatra - Simulation Management Tool

*“An automated lab notebook for
computational projects”*

⇒ assumes that code is under
version control

Sumatra - Simulation Management Tool

*“An automated lab notebook for
computational projects”*

⇒ assumes that code is under
version control



©Jason Lon [CC BY 3.0](#)



Sumatra - Simulation Management Tool

*“An automated lab notebook for
computational projects”*

⇒ assumes that code is under
version control

⇒ capture information about
computation



©Jason Lon [CC BY 3.0](#)



Sumatra - Simulation Management Tool

"An automated lab notebook for computational projects"

- ⇒ assumes that code is under version control
- ⇒ capture information about computation
- ⇒ make the information accessible through a command line and web interface

The screenshot displays the Sumatra web interface for a simulation record. The browser address bar shows the URL `localhost:5057/5874`. The page is titled "Sumatra" and contains several sections:

- General info**: Includes fields for Label (5874), Revision (0), and a table of input/output files. The table has columns: filename, path, digest, size, time, output of, and input to. It lists three files: `5874.p`, `5874.p`, and `5874.p`.
- Parameters**: A section for defining simulation parameters.
- Input files**: A table listing input files with columns: filename, path, digest, size, time, output of, and input to. It lists three files: `5874.p`, `5874.p`, and `5874.p`.
- Output files**: A table listing output files with columns: filename, path, digest, size, time, output of, and input to. It lists three files: `5874.p`, `5874.p`, and `5874.p`.
- Dependencies**: A table listing dependencies with columns: name, path, and version. It lists three dependencies: `5874.p`, `5874.p`, and `5874.p`.
- Platform information**: A table listing platform information with columns: name, path, and version. It lists three platform information entries: `5874.p`, `5874.p`, and `5874.p`.
- Stdout & Stderr**: A section for capturing standard output and error.

Sumatra - as an Open Science tool