

MetaCell

SOFTWARE FOR NEUROSCIENCE

NWB Explorer

Open Source Brain Meeting
Alghero, Italy
10th September 2019









NEUROSCIENCE



ENGINEERING

We develop software to share neuroscience data and models online, creating compelling visual and collaborative experiences.



WORLD LEADERS IN NEUROSCIENCE SOFTWARE



- Web, native, and mobile scientific software development
- Deployments internal to organizations as well as external to the public
- PhD level neuroscience cross-training
- Agile development cycles and continuous integration feedback loops with clients



SELECT CUSTOMERS

PHARMA COMPANIES, NEUROTECH, ACADEMIA AND NON-PROFIT













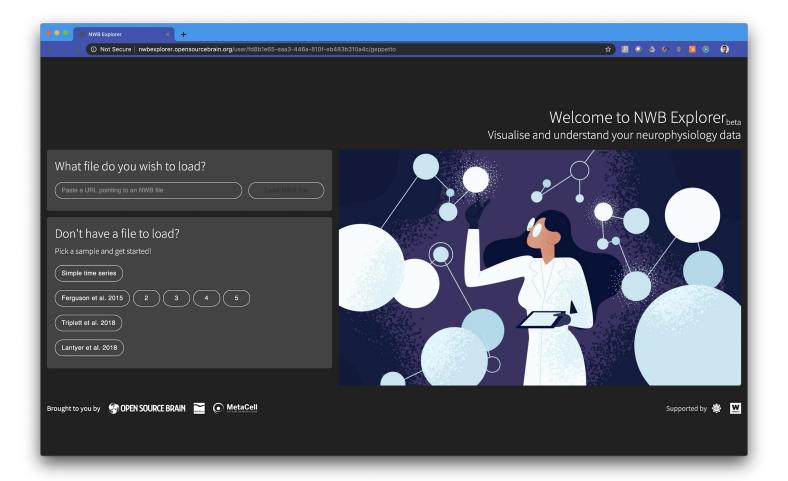
















NWB Explorer DEMO











NWB EXPLORER DEMO

Try it out at

https://nwbexplorer.opensourcebrain.org



TECHNOLOGIES

- Geppetto
- Python backend
 - PyGeppetto
 - PyNWB
 - Jupyter notebook
- Deployment
 - Kubernetes
 - JupyterHub



INSTALLATION

- Get the code https://github.com/MetaCell/nwb-explorer
- Simple build process (Python 3.7 recommended)
- Pip (coming soon)
- Docker image (prebuilt image coming soon)
- JupyterHub in Kubernetes (e.g. Minikubes, Google Cloud)



CURRENT STATUS

- Beta version
 - Infrastructure ready
 - More features to come
- Challenges
 - Support the diverse experimental scenarios allowed by the format: NWB leaves a lot of freedom and we need the tool to interpret in a useful way files structured in different ways
 - The latest NWB format and implementation release is very recent, still some changes happening and there will likely be some more changes in the future
 - Big files heavy data



FUTURE WORK

- Add support for missing NWB sections, data relationships and types (analysis, devices, electrodes, specialized series like voltage clamp, etc.)
 - Collect feedback from experimentalists
 - Collect and test more real examples
- Support extensions
- Plugin-like architecture for easier contribution
- Deep integration with Open Source Brain in the future to allow workflows where experimental data drive the development and validation of computational models





Thank you for your attention!

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