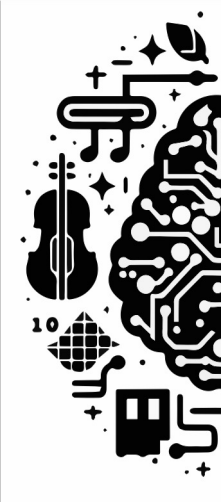
Institute for Software Integrated Systems



Reproducible Project Management

Dr. Anwar Said

Institute for Software Integrated Systems,

Vanderbilt University, TN

github.com/brainhack-vandy/traintrack

Reproducible Project Management

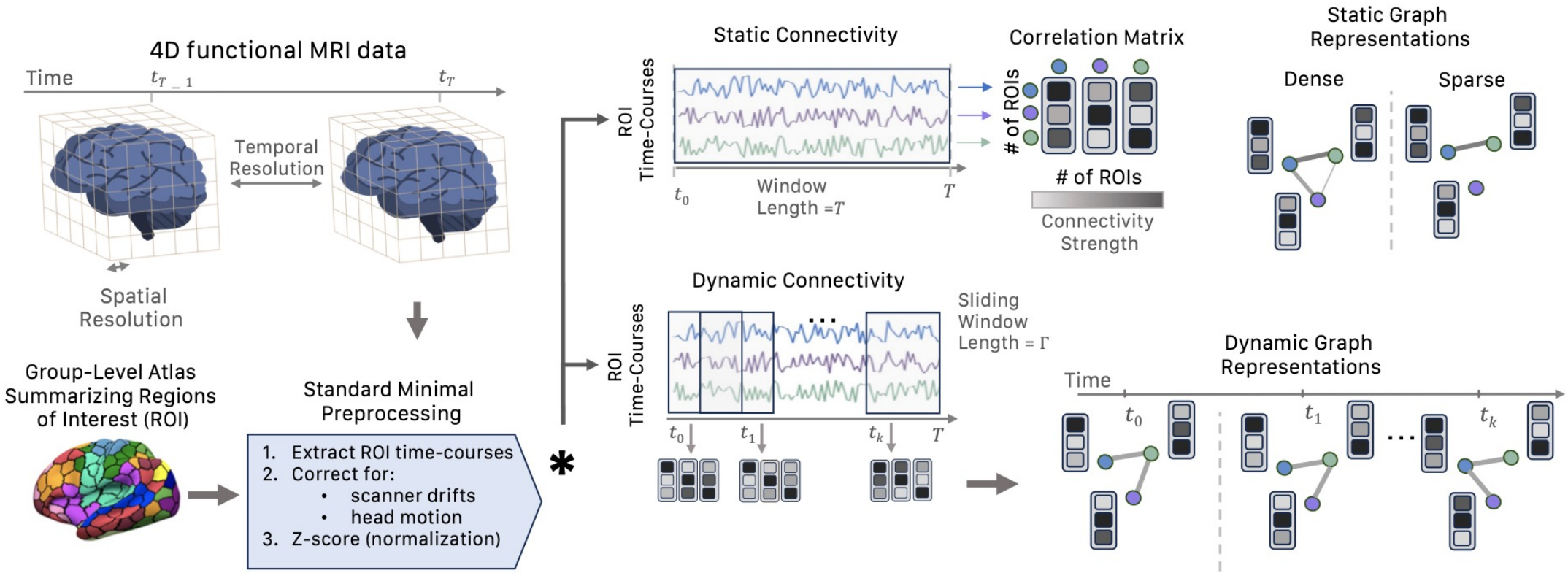
Open-sourcing

Documentation

Packaging

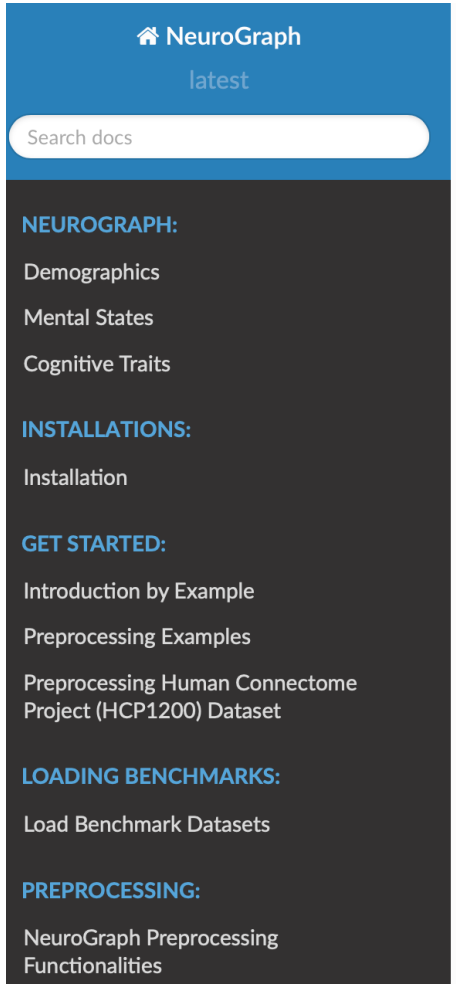
Version control

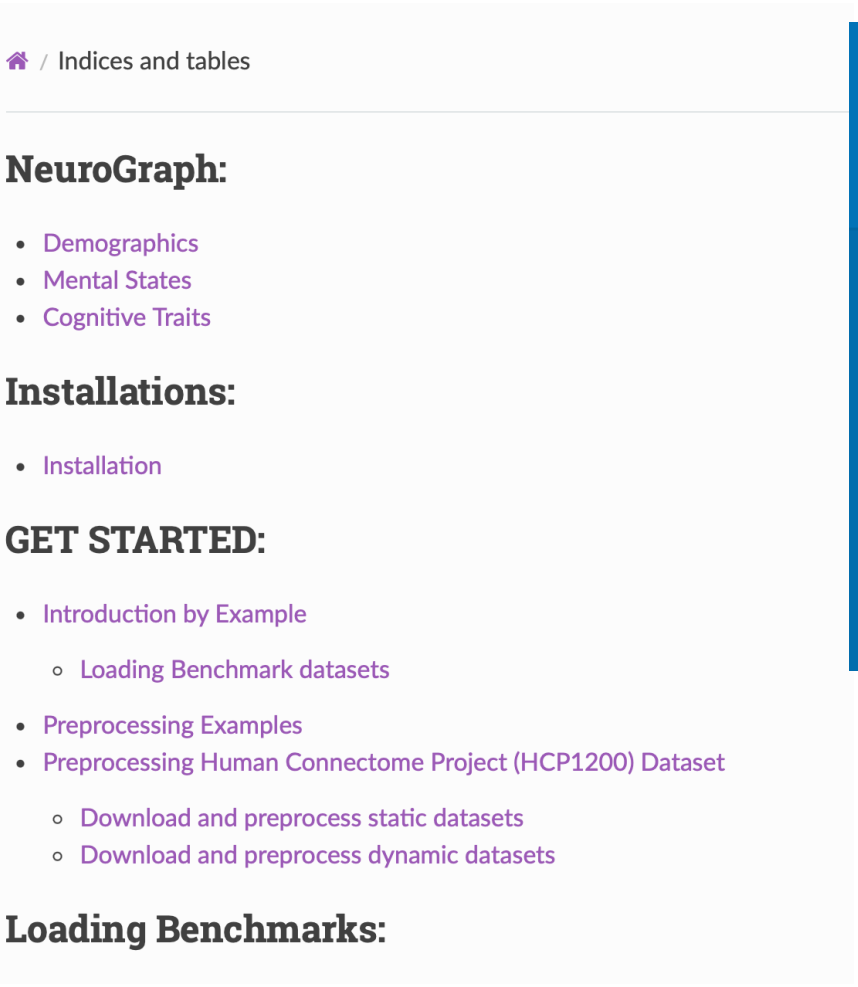
NeuroGraph:Example



Anwar Said, Roza G. Bayrak, Tyler Derr, Mudassir Shabbir, Daniel Moyer, Catie Chang, and Xenofon Koutsoukos, (2023). NeuroGraph: Benchmarks for Graph Machine Learning in Brain Connectomics, Thirty-seventh Conference on Neural Information Processing Systems Datasets and Benchmarks Track, 2023.

NeuroGraph Docs

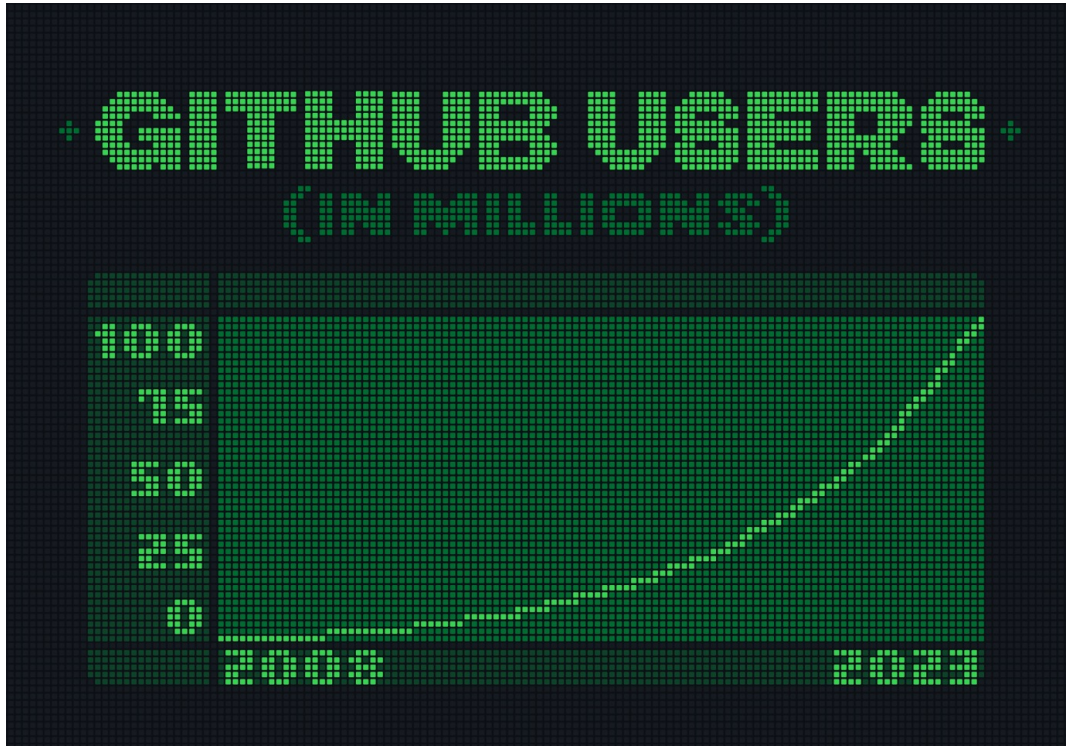




Open-sourcing with GitHub

- A website that hosts git repositories on a remote server
- Facilitates the sharing of codebases among teams by providing a GUI to easily fork or clone repos to a local machine

- Why?
- Collaboration and contribution
- Community and visibility

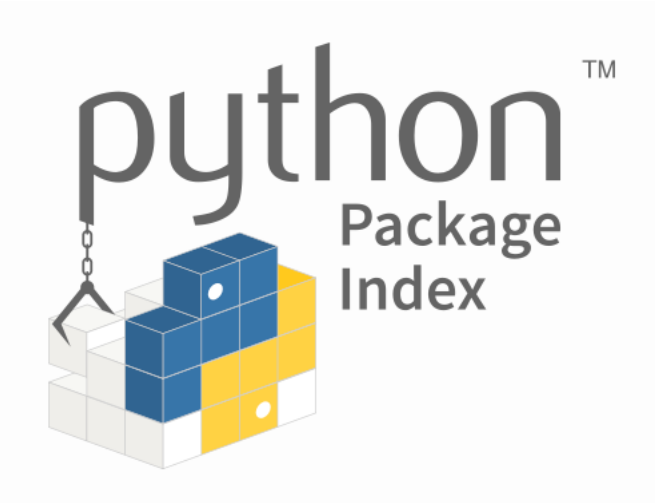


https://github.blog/2023-01-25-100-million-developers-and-counting/

Packaging Python projects

- Python Packaging Index (PyPi)
- Repository of software for the Python programming language

- Why?
- Official package distribution and discovery repository
- Standardized package distribution format



506,760 projects | 5,268,097 releases | 10,047,312 files | 775,126 users

Packaging Python projects

- Python Packaging Index (PyPi)
- Repository of software for the Python programming language

- Why?
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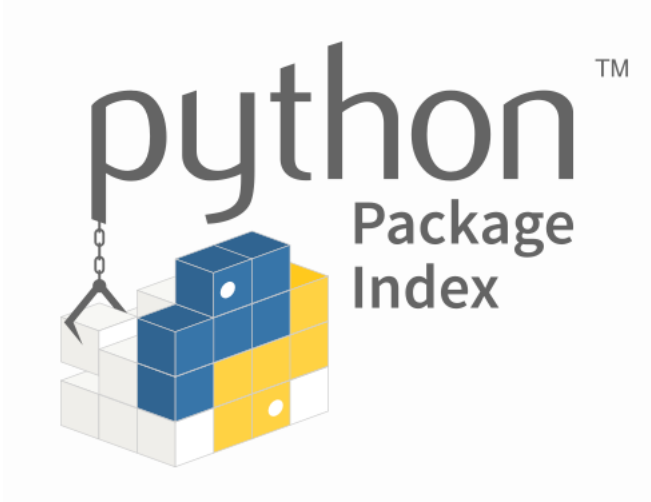
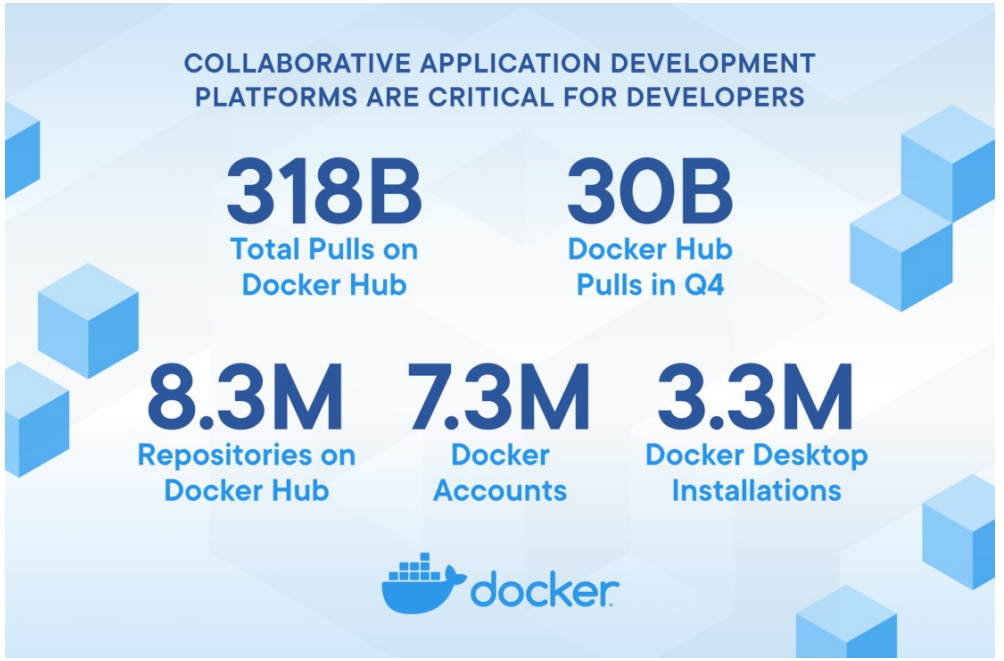
- Walk you through:
  - How to package a Python project
  - How to add the necessary files and structure
  - Build and upload the package to PyPi
  - How to install and use



Containerize Python Project

- Containerize means to create a Docker container for your project
- It encapsulate the application dependencies and runtime environment
- Why?
  - Consistent environment
  - Easier dependency management
  - Faster onboarding
  - Simplified deployment and many others



https://www.docker.com/blog/docker-index-shows-continued-massive-developer-adoption-and-activity-to-build-and-share-apps-with-docker/

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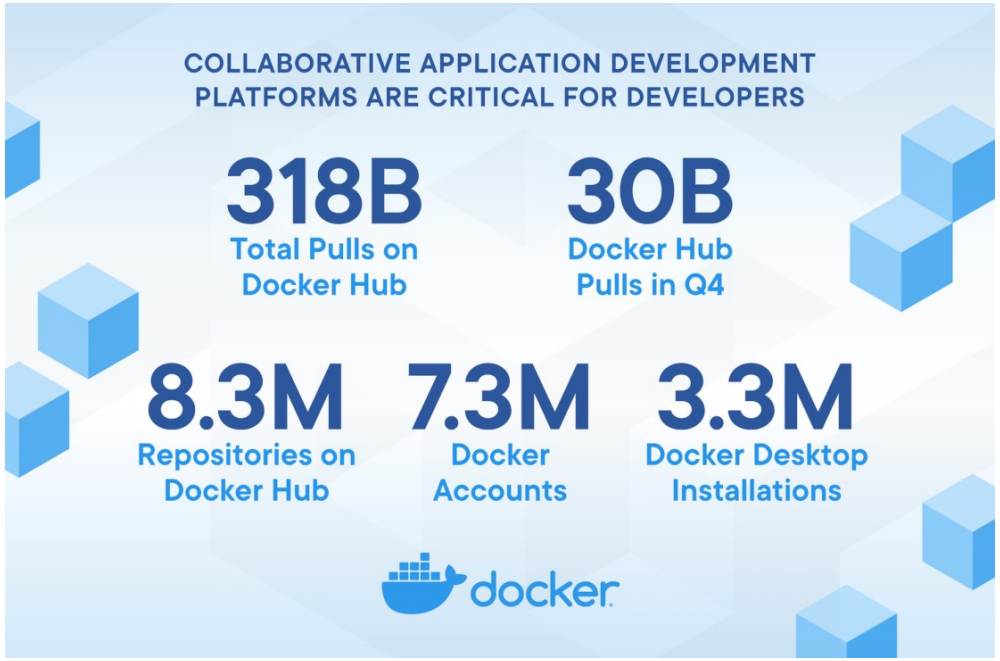


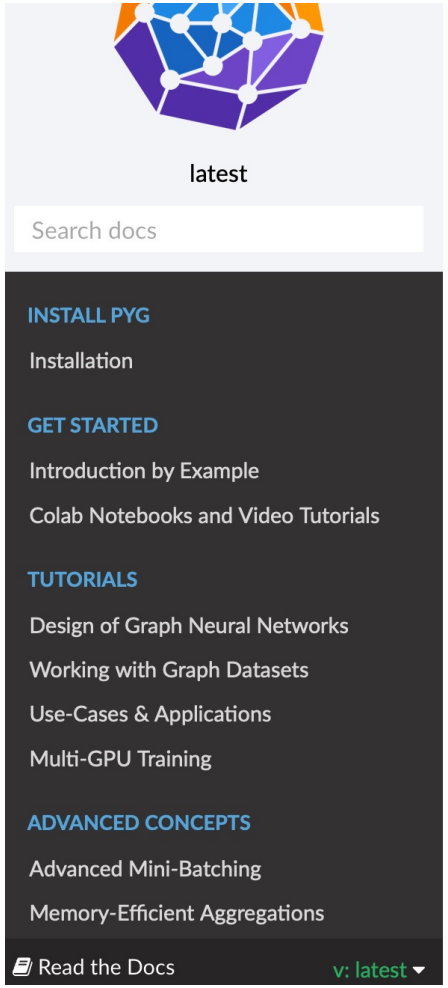
https://www.docker.com/blog/docker-index-shows-continued-massive-developer-adoption-and-activity-to-build-and-share-apps-with-docker/

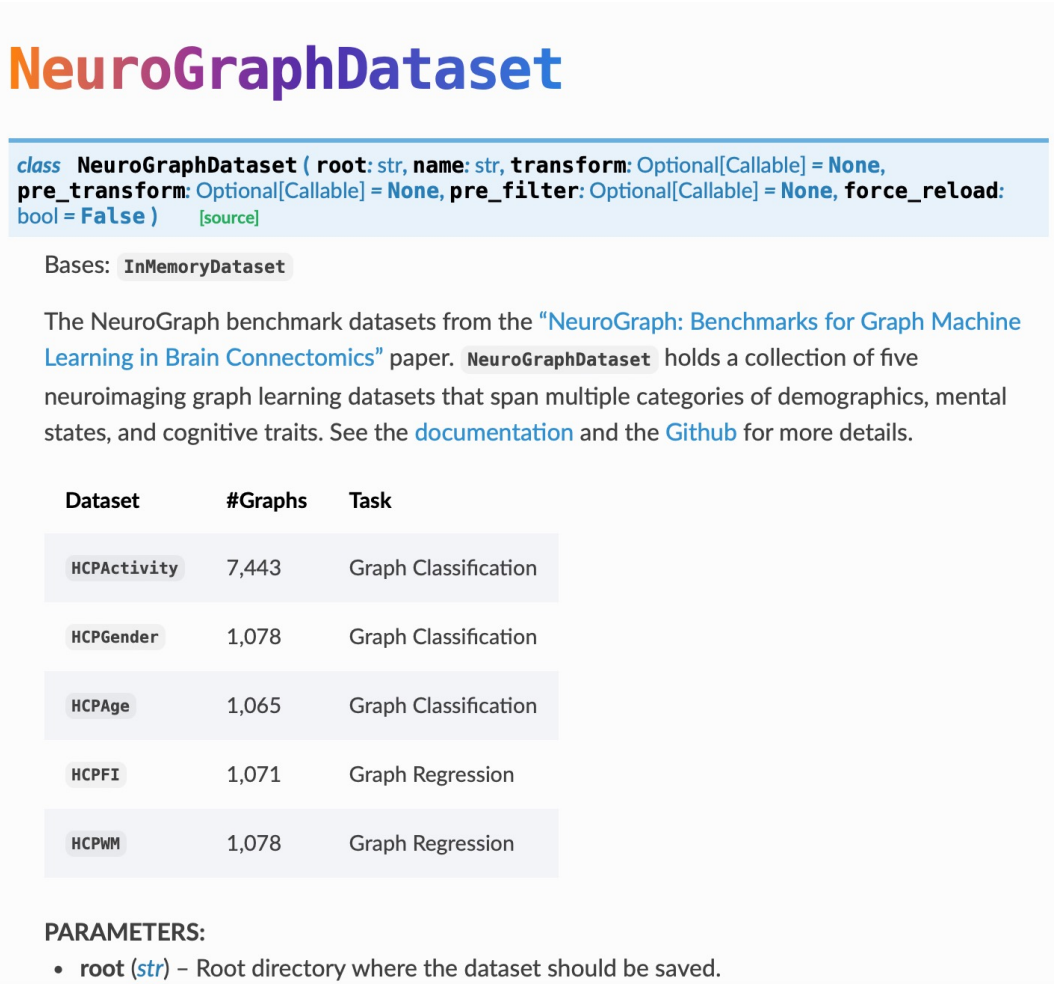
- Walk you through:
  - How to add the necessary files and structure
  - Build the Docker and upload to the Docker Hub
  - How to download and use

Documentation with Read the Docs

- Simplifies software documentation
- Automatically perform building, versioning and hosting docs

- Walk you through:
  - How to add the necessary files and structure
  - Build and publish the documentation





https://github.com/brainhack-vandy/NeuroPreprocessing