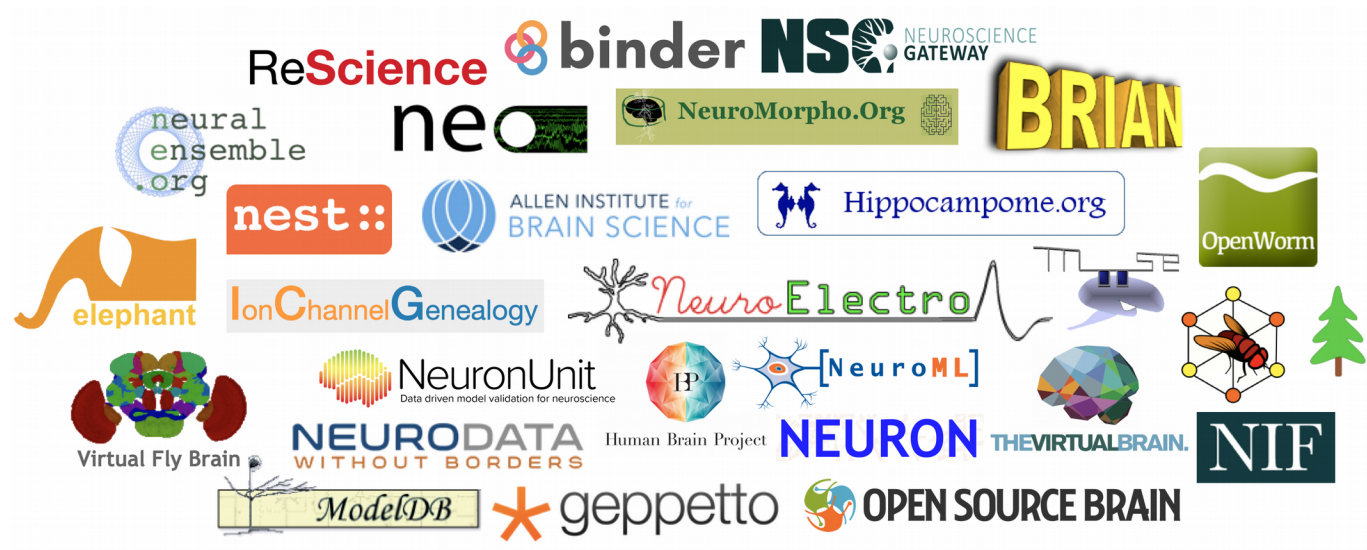


# Neuroinformatics resources for computational modellers



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<https://github.com/NeuralEnsemble/NeuroinformaticsTutorial/blob/master/CONTRIBUTORS.md>

# Introduction

Neuroinformatics (like computational neuroscience, connectomics, etc.) means many different things to different people...

**Brain Atlases**

**Open source tools**

**Neuroimaging**

**Computing resources**

**Connectivity data**

**Anatomical datasets**

**Electrophysiology  
data sharing**

**Model sharing**

**Gene expression**

# Current tutorial

*Focus on **neuroinformatics resources** which may be of use for those **creating and analysing computational models of neuronal systems***

# Topics

Experimental datasets

Structured data from literature

Analysis tools

Simulation environments

Model sharing

Computing infrastructure

Open source initiatives

Web portals

# Online tutorial materials

The screenshot shows the GitHub interface for the repository 'NeuroinformaticsTutorial' by 'NeuralEnsemble'. The repository has 4 watches, 2 stars, and 8 forks. The 'Code' tab is selected, showing the 'master' branch. The file 'Part\_1\_Resources\_for\_computational\_modellers / README.md' is open, showing 374 lines (212 sloc) and 14.3 KB. The content of the README is as follows:

**Part 1 - Resources for computational modellers**

**Introduction**

[All slides in this section](#)

**1.1 Experimental datasets**

[All slides in this section](#)

**Allen Cell Types Database**

A multimodal database of single cell characterization to enable data-driven approaches to classification. Key features include: whole cell patch clamping, raw images and morphological reconstructions, a variety of abstract point models as well as biophysically detailed compartmental models, and single cell RNA sequencing data.

[Website](#) | [Slides](#)

**Allen Brain Observatory**

The Allen Brain Observatory is an in vivo survey of physiological activity in the mouse visual cortex, featuring representations of visually evoked calcium responses from GCaMP6-expressing neurons in selected cortical layers, visual areas and Cre lines.

[Website](#) | [Slides](#)

**HRP Neuroinformatics**



<https://github.com/NeuralEnsemble/NeuroinformaticsTutorial>

# Exercises

## **Hands on demonstrations**

Human Brain Project Collaboratory

Run Allen Institute cell model on NSG via OSB

Demonstration of Neo/PyNN using Jupyter notebooks

## **Participant Exercises**

Cell morphology from NeuroMorpho.Org visualised on Open Source Brain

Exploring Brain Circuits with the Fruit Fly Brain Observatory

OpenWorm tutorials



# Future additions? #6

Edit New issue

Open pgleeson opened this issue 12 days ago · 1 comment



pgleeson commented 12 days ago • edited

Member + Edit Delete

Can be added in future versions (though these are getting into the area of SW for comp neuro in general, rather than pure Neuroinformatics)

## Model construction/management

neuroConstruct  
NetPyNE  
SimTracker  
Sumatra  
OpenCortex

## Model optimisation

PyBlueOpt  
Neurotune

## Morphology reconstruction/analysis

BigNeuron (move here)  
TREES Toolbox  
CATMAID  
Knossos  
Vaa3D

Suggestions welcome!

Assignees No one—assign yourself

Labels None yet

Projects None yet

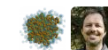
Milestone No milestone

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apdavison commented 12 days ago

Owner + Edit Delete