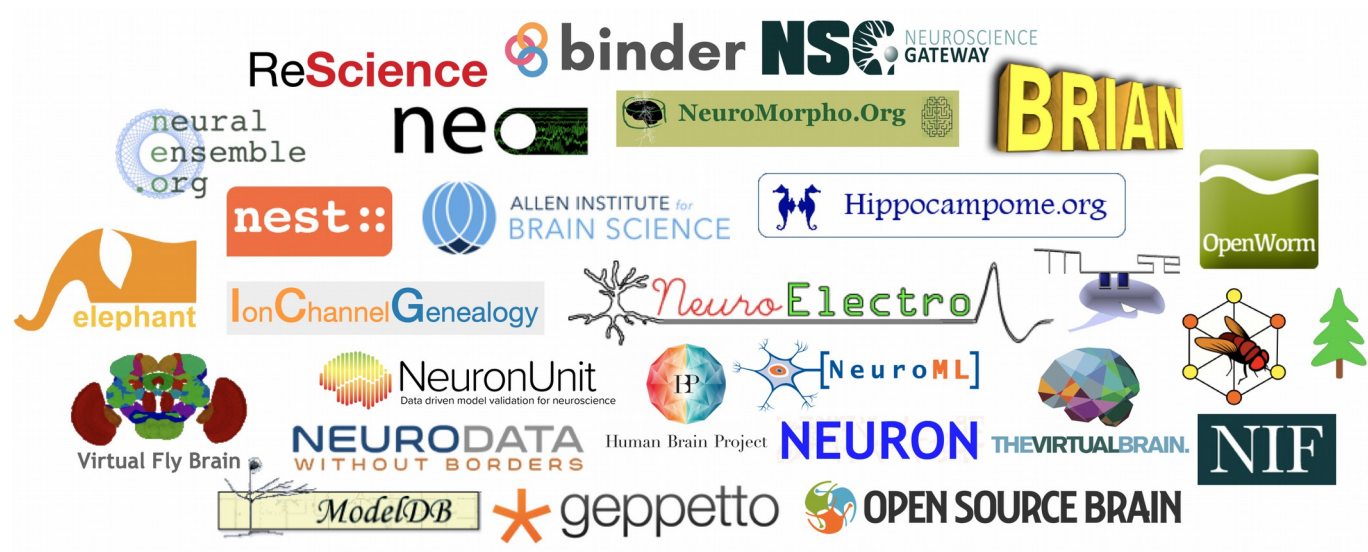


# Neuroinformatics resources for computational modellers



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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 of code and 14.3 KB. The README content includes a title 'Part 1 - Resources for computational modellers', an 'Introduction' section with a link to 'All slides in this section', and a '1.1 Experimental datasets' section with a link to 'All slides in this section'. Under '1.1 Experimental datasets', there are three entries: 'Allen Cell Types Database', 'Allen Brain Observatory', and 'CRCNS', each with a description and links to 'Website' and 'Slides'.

NeuralEnsemble / NeuroinformaticsTutorial

Unwatch 4 Star 2 Fork 8

Code Issues 2 Pull requests 0 Projects 0 Wiki Settings Insights

Branch: master NeuroinformaticsTutorial / Part\_1\_Resources\_for\_computational\_modellers / README.md Find file Copy path

pgleeson Ading osb 677888d 4 hours ago

2 contributors

374 lines (212 sloc) | 14.3 KB Raw Blame History

## 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](#)

#### CRCNS

A public repository hosting freely available neurophysiology and behavioural data useful for computational neuroscience. Includes data from a variety of species and brain regions and species.

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

#### HBP Neuroinformatics

# 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