Geppetto Documentation

Release 1.0.0

Geppetto Team

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Geppetto is a web based platform to build neuroscience applications that let the user **explore, visualize and simulate neuroscience data and models** such as a **cell** or even a **whole brain**.

A demo application using latest release of Geppetto is available here while the binaries are available to download here. The documentation is split into two main sections: a guide to help you learn how to use Geppetto based applications and the developers documentation, to learn how to build applications based on Geppetto and how to contribute to it.

If you have any problems you can write in the Slack Geppetto Channel (email info@geppetto.org to get an invitation), we'll be happy to help you!

Geppetto is open source, released under the MIT license.

The following is a list of applications built using Geppetto:

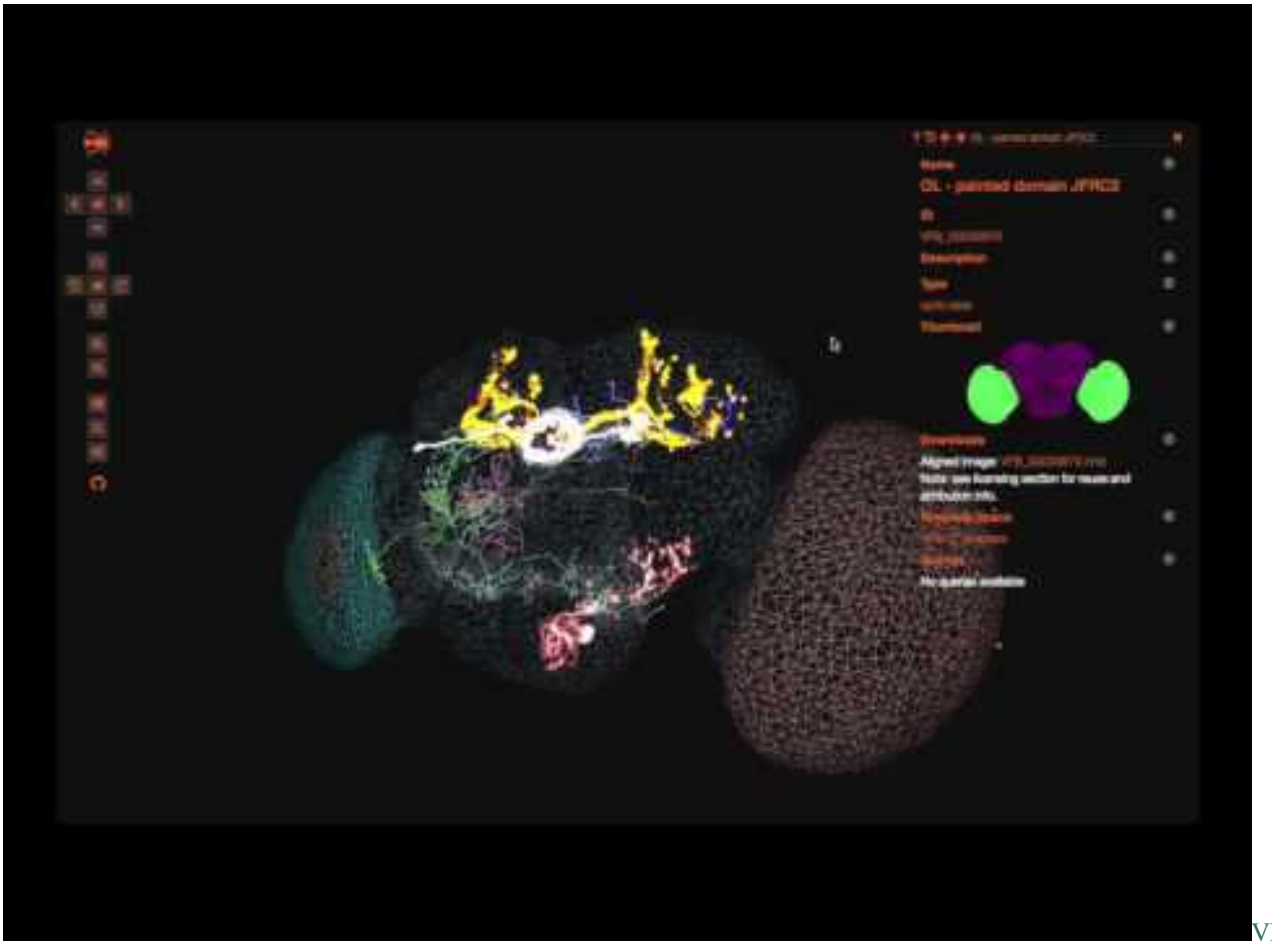
CHAPTER 1

Open Source Brain

OSB Video

CHAPTER 2

Virtual Fly Brain



VFB Video

CHAPTER 3

NEURON-UI

NEURON Video

CHAPTER 4

WormSim

WormSim Video

Geppetto is currently used and contributed to by the following groups:

- MetaCell
- Wellcome Trust via the Open Source Brain initiative (Silver Lab, University College London)
- Wellcome Trust via Virtual Fly Brain (Institute for Adaptive and Neural Computation, University of Edinburgh , Department of Genetics, University of Cambridge , MRC Laboratory of Molecular Biology, Cambridge , European Bioinformatics Institute (EMBL-EBI))
- The Brain Observatory
- OpenWorm
- Orion Bionetworks

The following is a list of the websites currently using a custom deployment of Geppetto available on the web:

- Open Source Brain
- Virtual Fly Brain
- Patient H.M.
- WormSim

CHAPTER 5

Contact us

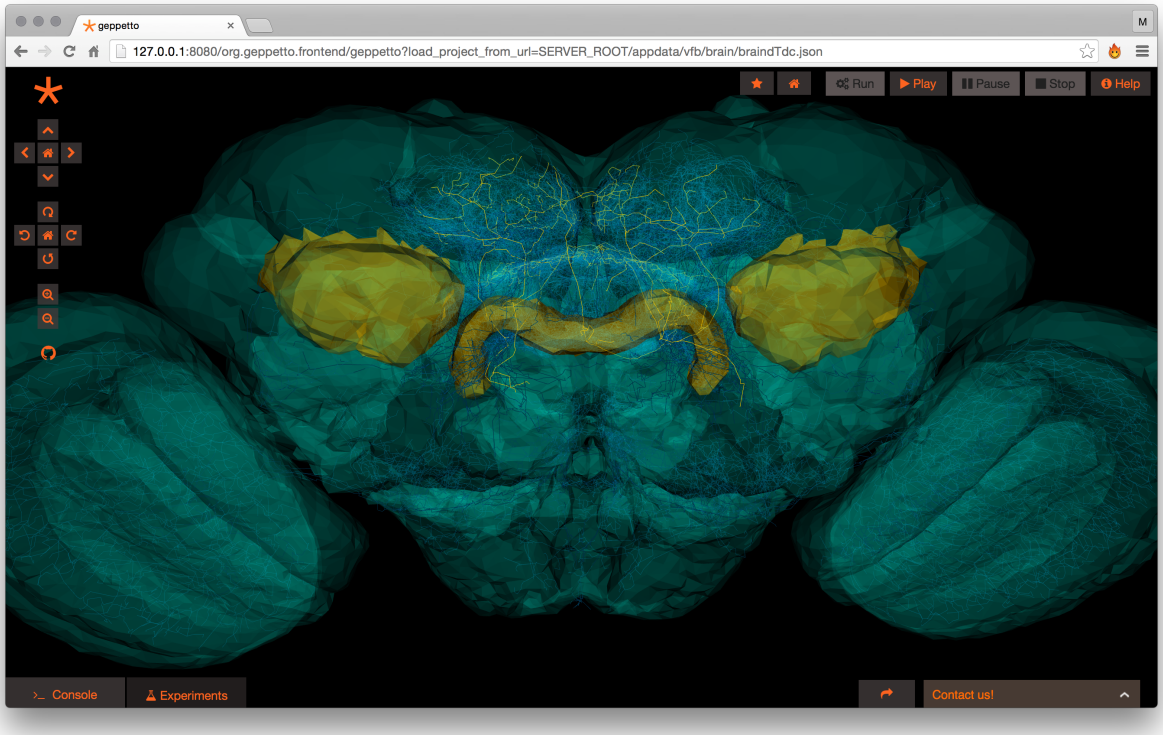
You can reach out to us at info@geppetto.org.

Website | GitHub | Development Board

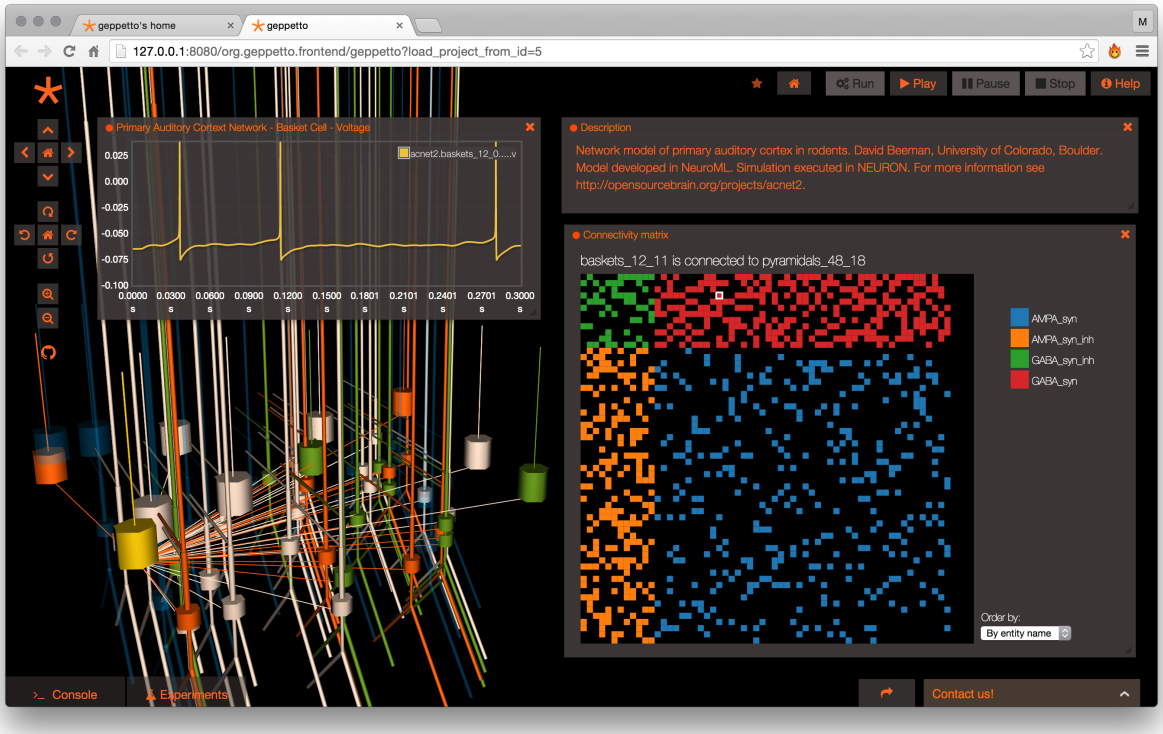
Follow us on Twitter and on our Blog!

CHAPTER 6

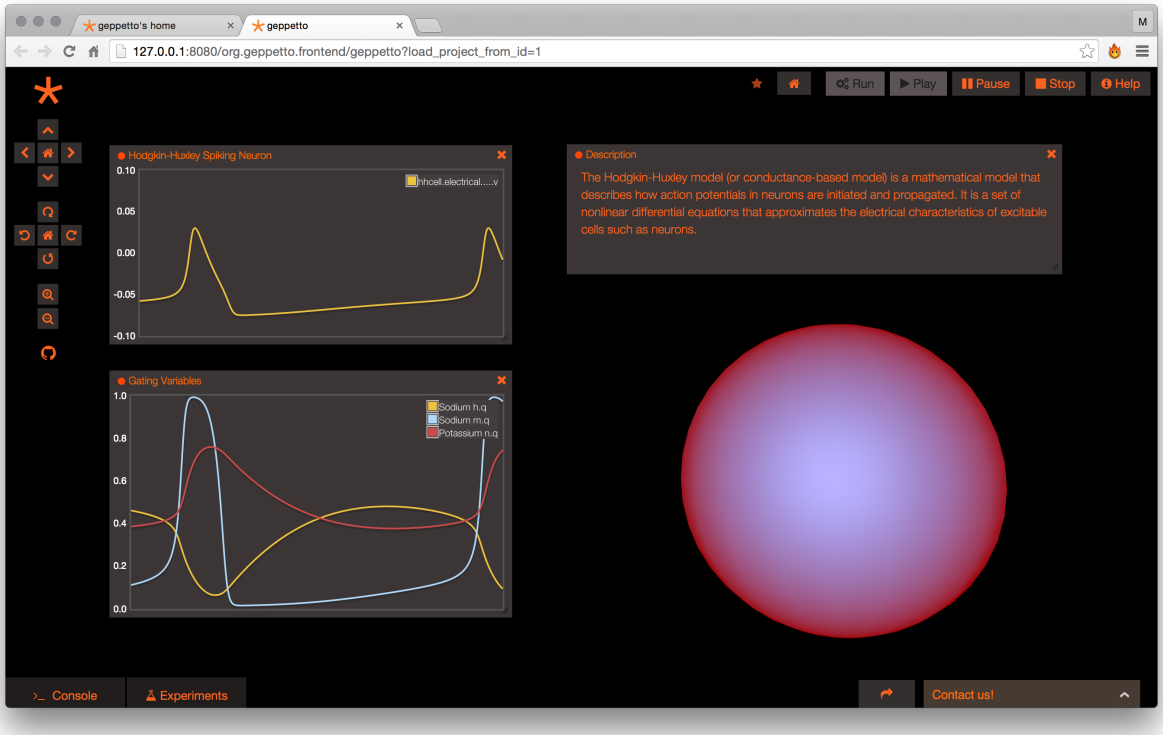
Screenshots



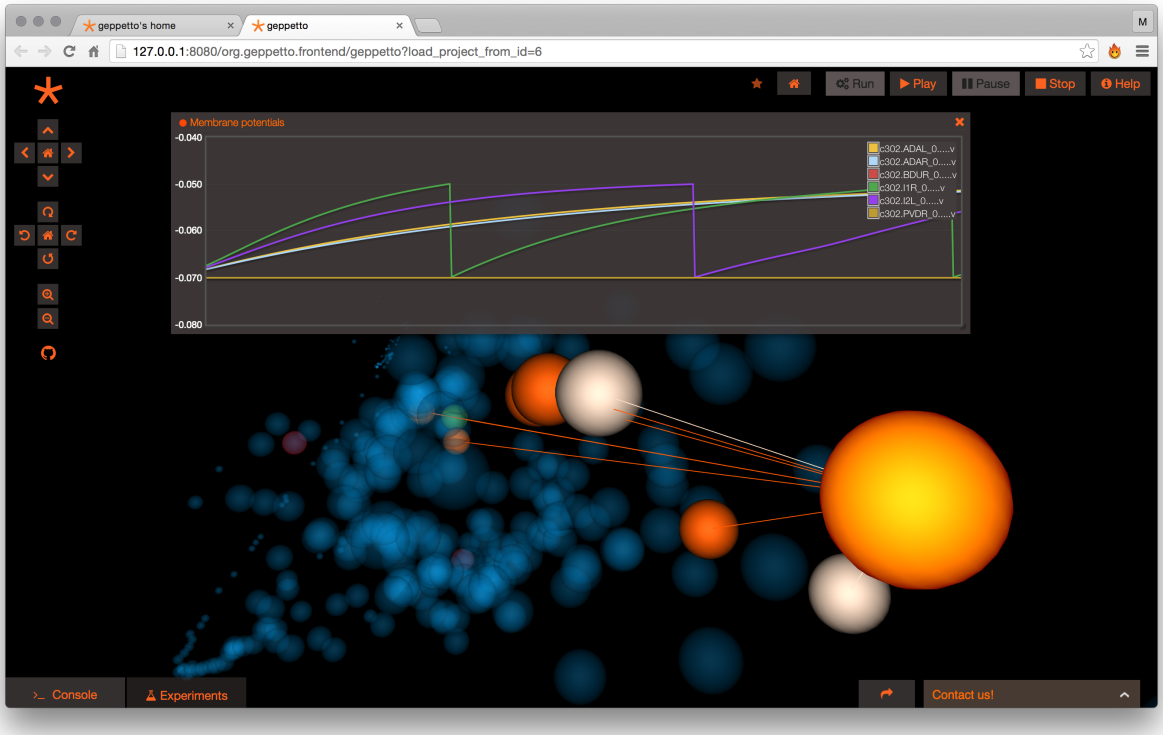
Screenshot 1 - Visualization of the drosophila fly brain superposing anatomy and segmented neurons (Model source Virtual Fly Brain)



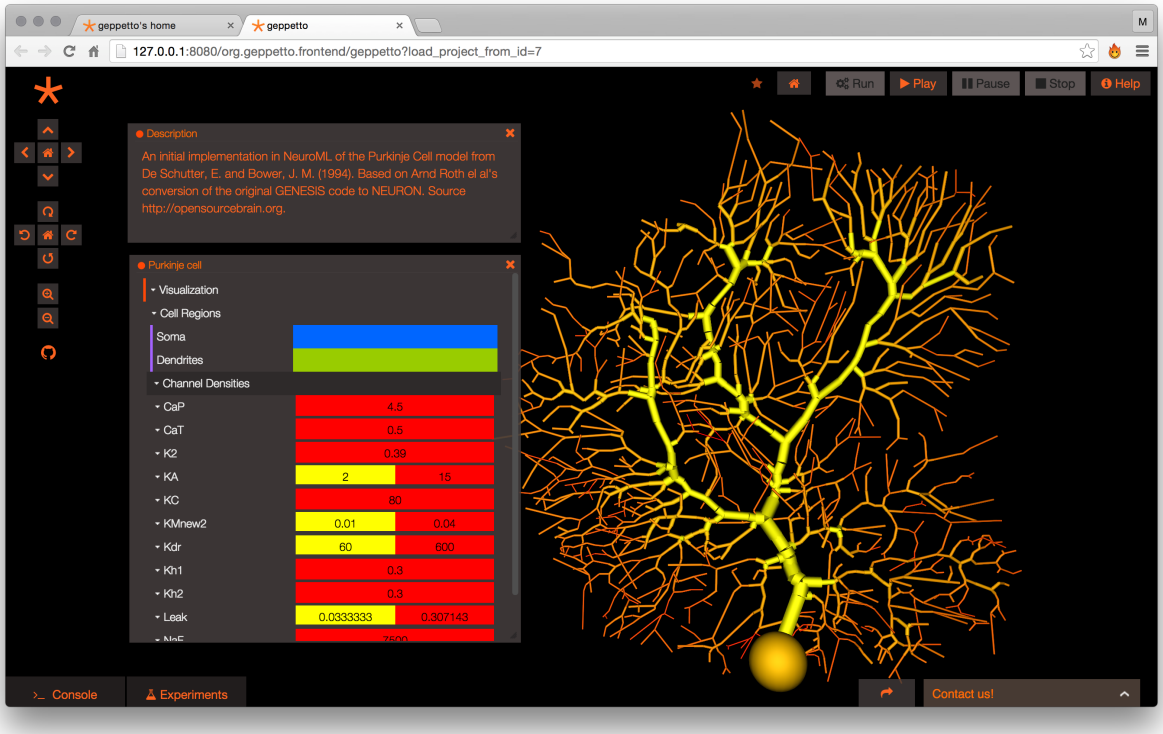
Screenshot 2 - Simulation using NEURON of a model of the Auditory Cortex from David Beeman, University of Colorado (Model source Open Source Brain)



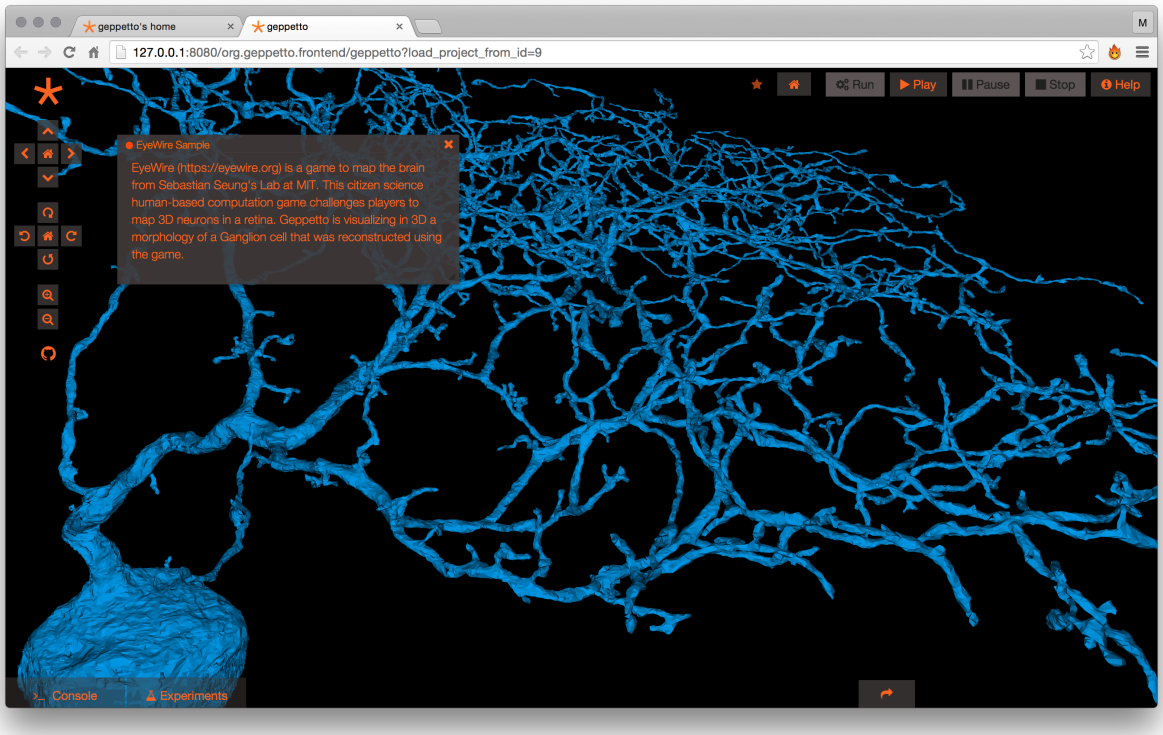
Screenshot 3 - Simulation of a single compartment Hodgkin-Huxley neuronal model in NeuroML (Model source Open Source Brain)



Screenshot 4 - Simulation of a network of single compartment neurons for the C.elegans built by the OpenWorm project.



Screenshot 5 - Visualisation of a Purkinje cell in NeuroML from Open Source Brain



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Screenshot 6 - Visualisation of the realistic morphology of a Ganglion cell reconstructed using EyeWire.