Resource Summary Report

Generated by RRID on Apr 15, 2025

NetPyNE

RRID:SCR_014758
Type: Tool

Proper Citation

NetPyNE (RRID:SCR_014758)

Resource Information

URL: http://netpyne.org/

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Description: Software Python package for simulation and analysis of neuronal networks using the NEURON simulator.Used to facilitate development, parallel simulation, analysis, and optimization of biological neuronal networks.

Synonyms: Network development Python package for NEURON

Resource Type: data processing software, software resource, software application, data analysis software, network analysis software

Defining Citation: DOI:10.7554/eLife.44494.001

Keywords: Simulation, analysis, neuronal, network, NEURON, simulator, BRAIN Initiative

Funding: NIBIB EB022903

Availability: Free, Available for download, Freely available

Resource Name: NetPyNE

Resource ID: SCR_014758

Old URLs: http://www.neurosimlab.org/netpyne/overview.html

Record Creation Time: 20220129T080322+0000

Record Last Update: 20250412T055828+0000

Ratings and Alerts

No rating or validation information has been found for NetPyNE.

No alerts have been found for NetPyNE.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 21 mentions in open access literature.

Listed below are recent publications. The full list is available at RRID.

Doherty DW, et al. (2025) Self-organized and self-sustained ensemble activity patterns in simulation of mouse primary motor cortex. bioRxiv : the preprint server for biology.

Correa A, et al. (2024) Pathological cell assembly dynamics in a striatal MSN network model. Frontiers in computational neuroscience, 18, 1410335.

Kang J, et al. (2024) Integration of partially observed multimodal and multiscale neural signals for estimating a neural circuit using dynamic causal modeling. PLoS computational biology, 20(12), e1012655.

Griffith EY, et al. (2024) Mechanism of an Intrinsic Oscillation in Rat Geniculate Interneurons. bioRxiv : the preprint server for biology.

Johnsen KA, et al. (2024) Bridging model and experiment in systems neuroscience with Cleo: the Closed-Loop, Electrophysiology, and Optophysiology simulation testbed. bioRxiv : the preprint server for biology.

Gradwell MA, et al. (2024) Multimodal sensory control of motor performance by glycinergic interneurons of the mouse spinal cord deep dorsal horn. Neuron.

Sagalajev B, et al. (2024) Absence of paresthesia during high-rate spinal cord stimulation reveals importance of synchrony for sensations evoked by electrical stimulation. Neuron, 112(3), 404.

Haynes VR, et al. (2024) Discovering optimal features for neuron-type identification from extracellular recordings. Frontiers in neuroinformatics, 18, 1303993.

Dura-Bernal S, et al. (2023) Data-driven multiscale model of macaque auditory thalamocortical circuits reproduces in vivo dynamics. Cell reports, 42(11), 113378.

Ponzi A, et al. (2023) Theta-gamma phase amplitude coupling in a hippocampal CA1

microcircuit. PLoS computational biology, 19(3), e1010942.

Zhao Z, et al. (2023) Intensity- and frequency-specific effects of transcranial alternating current stimulation are explained by network dynamics. bioRxiv : the preprint server for biology.

Dura-Bernal S, et al. (2023) Multiscale model of primary motor cortex circuits predicts in vivo cell-type-specific, behavioral state-dependent dynamics. Cell reports, 42(6), 112574.

Zarei Eskikand P, et al. (2022) Computational simulations and Ca2+ imaging reveal that slow synaptic depolarizations (slow EPSPs) inhibit fast EPSP evoked action potentials for most of their time course in enteric neurons. PLoS computational biology, 18(6), e1009717.

Eriksson O, et al. (2022) Combining hypothesis- and data-driven neuroscience modeling in FAIR workflows. eLife, 11.

Pimentel JM, et al. (2021) Neuro4PD: An Initial Neurorobotics Model of Parkinson's Disease. Frontiers in neurorobotics, 15, 640449.

, et al. (2021) 30th Annual Computational Neuroscience Meeting: CNS*2021-Meeting Abstracts. Journal of computational neuroscience, 49(Suppl 1), 3.

Bryson A, et al. (2021) State transitions through inhibitory interneurons in a cortical network model. PLoS computational biology, 17(10), e1009521.

Neymotin SA, et al. (2020) Human Neocortical Neurosolver (HNN), a new software tool for interpreting the cellular and network origin of human MEG/EEG data. eLife, 9.

Dura-Bernal S, et al. (2019) NetPyNE, a tool for data-driven multiscale modeling of brain circuits. eLife, 8.

Gleeson P, et al. (2019) Open Source Brain: A Collaborative Resource for Visualizing, Analyzing, Simulating, and Developing Standardized Models of Neurons and Circuits. Neuron, 103(3), 395.