Resource Summary Report

Generated by NIF on Sep 17, 2026

NEST Simulator

RRID:SCR_002963
Type: Tool

Proper Citation

NEST Simulator (RRID:SCR_002963)

Resource Information

URL: http://www.nest-simulator.org/

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Description: Software tool as simulator for spiking neural network models that focuses on dynamics, size and structure of neural systems rather than on exact morphology of individual neurons. Used for any size spiking neurons networks including models of information processing, models of network activity dynamics, models of learning and plasticity.

Abbreviations: NEST

Synonyms: Neural Simulation Tool, NEural Simulation Tool, nest, nest-simulator

Resource Type: simulation software, software application, software resource

Defining Citation: DOI:10.1007/978-1-4614-7320-6_258-5

Keywords: simulation, neuron, spiking, neural network, model, neural system, bio.tools

Availability: Free, Available for download, Freely available

Resource Name: NEST Simulator

Resource ID: SCR_002963

Alternate IDs: nif-0000-00162, biotools:nest

Alternate URLs: https://github.com/nest/nest-simulator, https://bio.tools/nest

License: GNU General Public License

Record Creation Time: 20220129T080216+0000

Record Last Update: 20260912T195549+0000

Ratings and Alerts

No rating or validation information has been found for NEST Simulator.

No alerts have been found for NEST Simulator.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 185 mentions in open access literature.

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

Akerman A, et al. (2026) C-terminal S-acylation governs membrane distribution, interaction dynamics and function of a plant Rho GTPase. PloS one, 21(4), e0348444.

Tartarini L, et al. (2026) Co-simulation framework combining a microscopically detailed point neuron model of the hippocampal CA1 region with the macroscopic high-resolution virtual brain model. Journal of computational neuroscience, 54(2), 137.

Hillman N, et al. (2026) Testing for Network Specificity in Brain-Behavior Associations Using Ordinal Dominance Curves. Human brain mapping, 47(5), e70493.

Yi JD, et al. (2025) Behavioral Timing of Interictal Spikes, But Not Rate, Correlates with Impaired Working Memory Performance. The Journal of neuroscience : the official journal of the Society for Neuroscience, 45(41).

Skaar JW, et al. (2025) A simplified model of NMDA-receptor-mediated dynamics in leaky integrate-and-fire neurons. Journal of computational neuroscience, 53(3), 475.

Lu H, et al. (2025) The interplay between homeostatic synaptic scaling and homeostatic structural plasticity maintains the robust firing rate of neural networks. eLife, 12.

Jiang HJ, et al. (2025) Modeling neuron-astrocyte interactions in neural networks using distributed simulation. PLoS computational biology, 21(9), e1013503.

Wang X, et al. (2025) KSHV hijacks the antiviral kinase IKK?? to initiate lytic replication. PLoS pathogens, 21(1), e1012856.

Wang X, et al. (2025) Rescue RM/CS-AKI by blocking strategy with one-dose anti-myoglobin RabMAb. Nature communications, 16(1), 1044.

Ness TV, et al. (2025) On the validity of electric brain signal predictions based on population firing rates. PLoS computational biology, 21(4), e1012303.

Gameiro JG, et al. (2025) Quiescent horizontal basal stem cells act as a niche for olfactory neurogenesis in a mouse 3D organoid model. Cell reports methods, 5(6), 101055.

Crowther ME, et al. (2025) Waking up to Australia's Sleep Health: a consensus statement from the Network of Early career Sleep researchers in Training (NEST) council of the Australasian Sleep Association. Sleep, 48(7).

Rusev G, et al. (2025) Decoding Brain Signals in a Neuromorphic Framework for a Personalized Adaptive Control of Human Prosthetics. Biomimetics (Basel, Switzerland), 10(3).

De Toni L, et al. (2025) A Computational Model of the Respiratory CPG for the Artificial Control of Breathing. Bioengineering (Basel, Switzerland), 12(11).

Chakravarty K, et al. (2025) Can we infer excitation-inhibition balance from the spectrum of population activity? Communications biology, 9(1), 51.

Robens M, et al. (2024) NoC simulation steered by NEST: McAERsim and a Noxim patch. Frontiers in neuroscience, 18, 1371103.

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.

Heer P, et al. (2024) Comprehensive energy demand and usage data for building automation. Scientific data, 11(1), 469.

Jiang HJ, et al. (2024) A layered microcircuit model of somatosensory cortex with three interneuron types and cell-type-specific short-term plasticity. Cerebral cortex (New York, N.Y. : 1991), 34(9).

Senk J, et al. (2024) Reconciliation of weak pairwise spike-train correlations and highly coherent local field potentials across space. Cerebral cortex (New York, N.Y. : 1991), 34(10).