Abigail Morrison

List of Publications by Year
in descending order

70 papers	2,776 citations	304743 22 h-index	189892 50 g-index
76 all docs	76 docs citations	76 times ranked	2156 citing authors

#	Article	IF	Citations
1	Simulation of networks of spiking neurons: A review of tools and strategies. Journal of Computational Neuroscience, 2007, 23, 349-398.	1.0	639
2	Phenomenological models of synaptic plasticity based on spike timing. Biological Cybernetics, 2008, 98, 459-478.	1.3	455
3	Spike-Timing-Dependent Plasticity in Balanced Random Networks. Neural Computation, 2007, 19, 1437-1467.	2.2	284
4	Advancing the Boundaries of High-Connectivity Network Simulation with Distributed Computing. Neural Computation, 2005, 17, 1776-1801.	2.2	161
5	Exact Subthreshold Integration with Continuous Spike Times in Discrete-Time Neural Network Simulations. Neural Computation, 2007, 19, 47-79.	2.2	101
6	Spiking network simulation code for petascale computers. Frontiers in Neuroinformatics, 2014, 8, 78.	2.5	87
7	A Spiking Neural Network Model of an Actor-Critic Learning Agent. Neural Computation, 2009, 21, 301-339.	2.2	79
8	Efficient Parallel Simulation of Large-Scale Neuronal Networks on Clusters of Multiprocessor Computers. Lecture Notes in Computer Science, 2007, , 672-681.	1.3	50
9	Supercomputers Ready for Use as Discovery Machines for Neuroscience. Frontiers in Neuroinformatics, 2012, 6, 26.	2.5	50
10	A General and Efficient Method for Incorporating Precise Spike Times in Globally Time-Driven Simulations. Frontiers in Neuroinformatics, 2010, 4, 113.	2.5	49
11	Reconstruction of recurrent synaptic connectivity of thousands of neurons from simulated spiking activity. Journal of Computational Neuroscience, 2015, 39, 77-103.	1.0	47
12	An Imperfect Dopaminergic Error Signal Can Drive Temporal-Difference Learning. PLoS Computational Biology, 2011, 7, e1001133.	3.2	44
13	Meeting the Memory Challenges of Brain-Scale Network Simulation. Frontiers in Neuroinformatics, 2011, 5, 35.	2.5	42
14	Automatic Generation of Connectivity for Large-Scale Neuronal Network Models through Structural Plasticity. Frontiers in Neuroanatomy, 2016, 10, 57.	1.7	42
15	Synaptic patterning and the timescales of cortical dynamics. Current Opinion in Neurobiology, 2017, 43, 156-165.	4.2	37
16	Limits to the development of feed-forward structures in large recurrent neuronal networks. Frontiers in Computational Neuroscience, 2010, 4, 160.	2.1	35
17	Reproducing Polychronization: A Guide to Maximizing the Reproducibility of Spiking Network Models. Frontiers in Neuroinformatics, 2018, 12, 46.	2.5	34
18	Dynamic stability of sequential stimulus representations in adapting neuronal networks. Frontiers in Computational Neuroscience, 2014, 8, 124.	2.1	32

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19	Code Generation in Computational Neuroscience: A Review of Tools and Techniques. Frontiers in Neuroinformatics, 2018, 12, 68.	2.5	32
20	Enabling Functional Neural Circuit Simulations with Distributed Computing of Neuromodulated Plasticity. Frontiers in Computational Neuroscience, 2010, 4, 141.	2.1	29
21	NineML: the network interchange for ne uroscience modeling language. BMC Neuroscience, 2011, 12, .	1.9	27
22	Closed Loop Interactions between Spiking Neural Network and Robotic Simulators Based on MUSIC and ROS. Frontiers in Neuroinformatics, 2016, 10, 31.	2.5	25
23	A reafferent and feed-forward model of song syntax generation in the Bengalese finch. Journal of Computational Neuroscience, 2011, 31, 509-532.	1.0	24
24	CyNEST: a maintainable Cython-based interface for the NEST simulator. Frontiers in Neuroinformatics, 2014, 8, 23.	2.5	24
25	Programmable Logic Construction Kits for Hyper-Real-Time Neuronal Modeling. Neural Computation, 2006, 18, 2651-2679.	2.2	23
26	Efficient Identification of Assembly Neurons within Massively Parallel Spike Trains. Computational Intelligence and Neuroscience, 2010, 2010, 1-18.	1.7	23
27	Leveraging heterogeneity for neural computation with fading memory in layer 2/3 cortical microcircuits. PLoS Computational Biology, 2019, 15, e1006781.	3.2	22
28	A Compositionality Machine Realized by a Hierarchic Architecture of Synfire Chains. Frontiers in Computational Neuroscience, 2011, 4, 154.	2.1	18
29	Homologous Basal Ganglia Network Models in Physiological and Parkinsonian Conditions. Frontiers in Computational Neuroscience, 2017, 11, 79.	2.1	14
30	Exploring the role of striatal D1 and D2 medium spiny neurons in action selection using a virtual robotic framework. European Journal of Neuroscience, 2019, 49, 737-753.	2.6	14
31	Corticostriatal circuit mechanisms of value-based action selection: Implementation of reinforcement learning algorithms and beyond. Behavioural Brain Research, 2016, 311, 110-121.	2.2	12
32	Rigorous Neural Network Simulations: A Model Substantiation Methodology for Increasing the Correctness of Simulation Results in the Absence of Experimental Validation Data. Frontiers in Neuroinformatics, 2018, 12, 81.	2.5	12
33	Passing the Message: Representation Transfer in Modular Balanced Networks. Frontiers in Computational Neuroscience, 2019, 13, 79.	2.1	12
34	Maintaining Causality in Discrete Time Neuronal Network Simulations. , 2007, , 267-278.		12
35	Consequences of realistic network size on the stability of embedded synfire chains. Neurocomputing, 2004, 58-60, 117-121.	5.9	11
36	Compositionality of arm movements can be realized by propagating synchrony. Journal of Computational Neuroscience, 2011, 30, 675-697.	1.0	11

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37	Increasing quality and managing complexity in neuroinformatics software development with continuous integration. Frontiers in Neuroinformatics, 2012, 6, 31.	2.5	11
38	Toward Rigorous Parameterization of Underconstrained Neural Network Models Through Interactive Visualization and Steering of Connectivity Generation. Frontiers in Neuroinformatics, 2018, 12, 32.	2.5	11
39	NEST by Example: An Introduction to the Neural Simulation Tool NEST. , 2012, , 533-558.		10
40	Firing rate homeostasis counteracts changes in stability of recurrent neural networks caused by synapse loss in Alzheimerâ€™s disease. PLoS Computational Biology, 2020, 16, e1007790.	3.2	10
41	Encoding symbolic sequences with spiking neural reservoirs. , 2018, , .		9
42	Automatically Selecting a Suitable Integration Scheme for Systems of Differential Equations in Neuron Models. Frontiers in Neuroinformatics, 2018, 12, 50.	2.5	9
43	Unsupervised Learning and Clustered Connectivity Enhance Reinforcement Learning in Spiking Neural Networks. Frontiers in Computational Neuroscience, 2021, 15, 543872.	2.1	9
44	Deploying and Optimizing Embodied Simulations of Large-Scale Spiking Neural Networks on HPC Infrastructure. Frontiers in Neuroinformatics, 2022, 16, .	2.5	8
45	Learning from positive and negative rewards in a spiking neural network model of basal ganglia. , 2012, , .		7
46	Liquid computing on and off the edge of chaos with a striatal microcircuit. Frontiers in Computational Neuroscience, 2014, 8, 130.	2.1	7
47	Effects of Calcium Spikes in the Layer 5 Pyramidal Neuron on Coincidence Detection and Activity Propagation. Frontiers in Computational Neuroscience, 2016, 10, 76.	2.1	7
48	On the Extraction and Analysis of Graphs From Resting-State fMRI to Support a Correct and Robust Diagnostic Tool for Alzheimer's Disease. Frontiers in Neuroscience, 2018, 12, 528.	2.8	7
49	A Closed-Loop Toolchain for Neural Network Simulations of Learning Autonomous Agents. Frontiers in Computational Neuroscience, 2019, 13, 46.	2.1	6
50	Practically Trivial Parallel Data Processing in a Neuroscience Laboratory. , 2010, , 413-436.		6
51	Transferring State Representations in Hierarchical Spiking Neural Networks. , 2018, , .		5
52	RateML: A Code Generation Tool for Brain Network Models. Frontiers in Network Physiology, 2022, 2, .	1.8	5
53	Random wiring limits the development of functional structure in large recurrent neuronal networks. BMC Neuroscience, 2010, 11, .	1.9	4
54	Editorial: Linking experimental and computational connectomics. Network Neuroscience, 2019, 3, 902-904.	2.6	4

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55	A reafferent model of song syntax generation in the Bengalese finch. BMC Neuroscience, 2010, 11, .	1.9	3
56	NEST: The Neural Simulation Tool. , 2013, , 1-4.		3
57	Multithreaded and Distributed Simulation of Large Biological Neuronal Networks. Lecture Notes in Computer Science, 2007, , 391-392.	1.3	3
58	A spiking temporal-difference learning model based on dopamine-modulated plasticity. BMC Neuroscience, 2009, 10, .	1.9	2
59	A model of free monkey scribbling based on the propagation of cell assembly activity. BMC Neuroscience, 2009, 10, .	1.9	2
60	From laptops to supercomputers: a single highly scalable code base for spiking neuronal network simulations. BMC Neuroscience, 2013, 14, .	1.9	2
61	Modeling the calcium spike as a threshold triggered fixed waveform for synchronous inputs in the fluctuation regime. Frontiers in Computational Neuroscience, 2015, 9, 91.	2.1	2
62	Staged deployment of interactive multi-application HPC workflows. , 2019, , .		2
63	A System-on-Chip Based Hybrid Neuromorphic Compute Node Architecture for Reproducible Hyper-Real-Time Simulations of Spiking Neural Networks. Frontiers in Neuroinformatics, 0, 16, .	2.5	2
64	Comparison of methods to calculate exact spike times in integrate-and-fire neurons with exponential currents. BMC Neuroscience, 2008, 9, .	1.9	1
65	Fail-safe detection of threshold crossings of linear integrate-and-fire neuron models in time-driven simulations. BMC Neuroscience, 2011, 12, .	1.9	1
66	Temporal sequence learning via adaptation in biologically plausible spiking neural networks. BMC Neuroscience, 2014, 15, .	1.9	1
67	Learning from Delayed Reward und Punishment in a Spiking Neural Network Model of Basal Ganglia with Opposing D1/D2 Plasticity. Lecture Notes in Computer Science, 2012, , 459-466.	1.3	0
68	NEST: The Neural Simulation Tool. , 2019, , 1-3.		0
69	ConGenâ€"A Simulator-Agnostic Visual Language for Definition and Generation of Connectivity in Large and Multiscale Neural Networks. Frontiers in Neuroinformatics, 2021, 15, 766697.	2.5	0
70	NEST: The Neural Simulation Tool. , 2022, , 2187-2189.		0