Martin Paul Nawrot

List of Publications by Year
in descending order

59 papers	2,188 citations	257450 24 h-index	254184 43 g-index
74 all docs	74 docs citations	74 times ranked	2011 citing authors

#	Article	IF	Citations
1	Measurement of variability dynamics in cortical spike trains. Journal of Neuroscience Methods, 2008, 169, 374-390.	2.5	182
2	Mushroom Body Output Neurons Encode Odorâ€"Reward Associations. Journal of Neuroscience, 2011, 31, 3129-3140.	3.6	152
3	MEA-Tools: an open source toolbox for the analysis of multi-electrode data with matlab. Journal of Neuroscience Methods, 2002, 117, 33-42.	2.5	120
4	Single-trial estimation of neuronal firing rates: From single-neuron spike trains to population activity. Journal of Neuroscience Methods, 1999, 94, 81-92.	2.5	115
5	Rapid odor processing in the honeybee antennal lobe network. Frontiers in Computational Neuroscience, 2008, 2, 9.	2.1	99
6	Comparing information about arm movement direction in single channels of local and epicortical field potentials from monkey and human motor cortex. Journal of Physiology (Paris), 2004, 98, 498-506.	2.1	97
7	A neuromorphic network for generic multivariate data classification. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 2081-2086.	7.1	96
8	Beyond the cortical column: abundance and physiology of horizontal connections imply a strong role for inputs from the surround. Frontiers in Neuroscience, 2011, 5, 32.	2.8	92
9	Serial correlation in neural spike trains: Experimental evidence, stochastic modeling, and single neuron variability. Physical Review E, 2009, 79, 021905.	2.1	80
10	Parallel Processing via a Dual Olfactory Pathway in the Honeybee. Journal of Neuroscience, 2013, 33, 2443-2456.	3.6	77
11	FIND â€" A unified framework for neural data analysis. Neural Networks, 2008, 21, 1085-1093.	5.9	68
12	Dynamic Encoding of Movement Direction in Motor Cortical Neurons. Journal of Neuroscience, 2009, 29, 13870-13882.	3.6	67
13	Serial interval statistics of spontaneous activity in cortical neurons in vivo and in vitro. Neurocomputing, 2007, 70, 1717-1722.	5.9	60
14	Precisely timed signal transmission in neocortical networks with reliable intermediate-range projections. Frontiers in Neural Circuits, 2009, 3, 1.	2.8	54
15	Cellular Adaptation Facilitates Sparse and Reliable Coding in Sensory Pathways. PLoS Computational Biology, 2013, 9, e1003251.	3.2	54
16	Average group behavior does not represent individual behavior in classical conditioning of the honeybee. Learning and Memory, 2011, 18, 733-741.	1.3	52
17	Elimination of response latency variability in neuronal spike trains. Biological Cybernetics, 2003, 88, 321-334.	1.3	44
18	Adaptation reduces variability of the neuronal population code. Physical Review E, 2011, 83, 050905.	2.1	40

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19	A neural network model for familiarity and context learning during honeybee foraging flights. Biological Cybernetics, 2018, 112, 113-126.	1.3	39
20	Neural correlates of side-specific odour memory in mushroom body output neurons. Proceedings of the Royal Society B: Biological Sciences, 2016, 283, 20161270.	2.6	37
21	Analysis and Interpretation of Interval and Count Variability in Neural Spike Trains. , 2010, , 37-58.		36
22	Rapid learning dynamics in individual honeybees during classical conditioning. Frontiers in Behavioral Neuroscience, 2014, 8, 313.	2.0	35
23	Parallel Representation of Stimulus Identity and Intensity in a Dual Pathway Model Inspired by the Olfactory System of the Honeybee. Frontiers in Neuroengineering, 2011, 4, 17.	4.8	34
24	Dynamics of sensory processing in the dual olfactory pathway of the honeybee. Apidologie, 2012, 43, 269-291.	2.0	33
25	Controlling Synaptic Input Patterns In Vitro by Dynamic Photo Stimulation. Journal of Neurophysiology, 2005, 94, 2948-2958.	1.8	30
26	Winnerless competition in clustered balanced networks: inhibitory assemblies do the trick. Biological Cybernetics, 2018, 112, 81-98.	1.3	27
27	G-Node: An integrated tool-sharing platform to support cellular and systems neurophysiology in the age of global neuroinformatics. Neural Networks, 2008, 21, 1070-1075.	5.9	25
28	A spiking neural program for sensorimotor control during foraging in flying insects. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 28412-28421.	7.1	24
29	Neural Correlates of Odor Learning in the Presynaptic Microglomerular Circuitry in the Honeybee Mushroom Body Calyx. ENeuro, 2018, 5, ENEURO.0128-18.2018.	1.9	24
30	Behavioral Context Determines Network State and Variability Dynamics in Monkey Motor Cortex. Frontiers in Neural Circuits, 2018, 12, 52.	2.8	23
31	Local interneurons and projection neurons in the antennal lobe from a spiking point of view. Journal of Neurophysiology, 2013, 110, 2465-2474.	1.8	21
32	Conditioned behavior in a robot controlled by a spiking neural network. , 2013, , .		19
33	Neural Coding: Sparse but On Time. Current Biology, 2014, 24, R957-R959.	3.9	18
34	Circuit and Cellular Mechanisms Facilitate the Transformation from Dense to Sparse Coding in the Insect Olfactory System. ENeuro, 2020, 7, ENEURO.0305-18.2020.	1.9	18
35	Stereotypical spatiotemporal activity patterns during slow-wave activity in the neocortex. Journal of Neurophysiology, 2011, 106, 3035-3044.	1.8	16
36	Cockroaches Show Individuality in Learning and Memory During Classical and Operant Conditioning. Frontiers in Physiology, 2019, 10, 1539.	2.8	15

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37	A Mechanistic Model for Reward Prediction and Extinction Learning in the Fruit Fly. ENeuro, 2021, 8, ENEURO.0549-20.2021.	1.9	15
38	Numerical Cognition Based on Precise Counting with a Single Spiking Neuron. IScience, 2020, 23, 100852.	4.1	14
39	Viewing strategy of Cebus monkeys during free exploration of natural images. Brain Research, 2012, 1434, 34-46.	2.2	13
40	A spiking neuron classifier network with a deep architecture inspired by the olfactory system of the honeybee. , 2011, , .		11
41	Visualization of learning-induced synaptic plasticity in output neurons of the Drosophila mushroom body Î³-lobe. Scientific Reports, 2022, 12, .	3.3	10
42	A neuromorphic approach to auditory pattern recognition in cricket phonotaxis. , 2013, , .		9
43	Neural representation of calling songs and their behavioral relevance in the grasshopper auditory system. Frontiers in Systems Neuroscience, 2014, 8, 183.	2.5	9
44	Critical Song Features for Auditory Pattern Recognition in Crickets. PLoS ONE, 2013, 8, e55349.	2.5	8
45	Area-specific processing of cerebellar-thalamo-cortical information in primates. Biological Cybernetics, 2018, 112, 141-152.	1.3	8
46	Natural image sequences constrain dynamic receptive fields and imply a sparse code. Brain Research, 2013, 1536, 53-67.	2.2	7
47	FIND -- a unified framework for neural data analysis. BMC Neuroscience, 2009, 10, .	1.9	5
48	Predicting voluntary movements from motor cortical activity with neuromorphic hardware. IBM Journal of Research and Development, 2017, 61, 5:1-5:12.	3.1	4
49	A neuromorphic model of olfactory processing and sparse coding in the Drosophila larva brain. Neuromorphic Computing and Engineering, 2021, 1, 024008.	5.9	4
50	Sequential sparsing by successive adapting neural populations. BMC Neuroscience, 2009, 10, .	1.9	3
51	Embedding living neurons into simulated neural networks. , 0, , .		1
52	Benchmarking the impact of information processing in the insect olfactory system with a spiking neuromorphic classifier. BMC Neuroscience, 2011, 12, .	1.9	1
53	Modeling phonotaxis in female Gryllus bimaculatus with artificial neural networks. BMC Neuroscience, 2011, 12, .	1.9	1
54	Classification of multivariate data with a spiking neural network on neuromorphic hardware. BMC Neuroscience, 2013, 14, .	1.9	1

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55	A Plausible Mechanism for Drosophila Larva Intermittent Behavior. Lecture Notes in Computer Science, 2020, , 288-299.	1.3	1
56	Dynamical sensory representations establish a rapid odor code in a spiking model of the insect olfactory system. BMC Neuroscience, 2015, 16, .	1.9	0
57	Neural representation of a spatial odor memory in the honeybee mushroom body. BMC Neuroscience, 2015, 16, .	1.9	0
58	Foreword for the special issue on Neural Coding. Biological Cybernetics, 2018, 112, 11-11.	1.3	0
59	Evaluating parameter tuning and real-time closed-loop simulation of large scale spiking networks before mapping to neuromorphic hardware: Comparing GeNN and NEST. , 2022, , .		0