Timothee Masquelier

List of Publications by Year
in descending order

53 papers	4,273 citations	279701 23 h-index	276775 41 g-index
57 all docs	57 docs citations	57 times ranked	3269 citing authors

#	Article	IF	Citations
1	BS4NN: Binarized Spiking Neural Networks with Temporal Coding and Learning. Neural Processing Letters, 2022, 54, 1255-1273.	2.0	28
2	Spiking Neural Networks Trained via Proxy. IEEE Access, 2022, 10, 70769-70778.	2.6	8
3	Encrypted internet traffic classification using a supervised spiking neural network. Neurocomputing, 2022, 503, 272-282.	3.5	7
4	STiDi-BP: Spike time displacement based error backpropagation in multilayer spiking neural networks. Neurocomputing, 2021, 427, 131-140.	3.5	44
5	Visualizing a joint future of neuroscience and neuromorphic engineering. Neuron, 2021, 109, 571-575.	3.8	31
6	Event-Based Trajectory Prediction Using Spiking Neural Networks. Frontiers in Computational Neuroscience, 2021, 15, 658764.	1.2	8
7	Fast Threshold Optimization for Multi-Label Audio Tagging Using Surrogate Gradient Learning. , 2021, , .		3
8	Sub-Optimality of the Early Visual System Explained Through Biologically Plausible Plasticity. Frontiers in Neuroscience, 2021, 15, 727448.	1.4	3
9	Low-Activity Supervised Convolutional Spiking Neural Networks Applied to Speech Commands Recognition. , 2021, , .		19
10	Incorporating Learnable Membrane Time Constant to Enhance Learning of Spiking Neural Networks. , 2021, , .		130
11	Temporal Backpropagation for Spiking Neural Networks with One Spike per Neuron. International Journal of Neural Systems, 2020, 30, 2050027.	3.2	120
12	Epileptic Seizure Detection Using a Neuromorphic-Compatible Deep Spiking Neural Network. Lecture Notes in Computer Science, 2020, , 389-394.	1.0	13
13	SpykeTorch: Efficient Simulation of Convolutional Spiking Neural Networks With at Most One Spike per Neuron. Frontiers in Neuroscience, 2019, 13, 625.	1.4	74
14	Bio-inspired digit recognition using reward-modulated spike-timing-dependent plasticity in deep convolutional networks. Pattern Recognition, 2019, 94, 87-95.	5.1	99
15	Deep learning in spiking neural networks. Neural Networks, 2019, 111, 47-63.	3.3	629
16	Spike-Timing-Dependent-Plasticity withÂMemristors. , 2019, , 429-467.		2
17	STDP-based spiking deep convolutional neural networks for object recognition. Neural Networks, 2018, 99, 56-67.	3.3	471
18	STDP Allows Close-to-Optimal Spatiotemporal Spike Pattern Detection by Single Coincidence Detector Neurons. Neuroscience, 2018, 389, 133-140.	1.1	18

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19	Emergence of Binocular Disparity Selectivity through Hebbian Learning. Journal of Neuroscience, 2018, 38, 9563-9578.	1.7	21
20	Optimal Localist and Distributed Coding of Spatiotemporal Spike Patterns Through STDP and Coincidence Detection. Frontiers in Computational Neuroscience, 2018, 12, 74.	1.2	16
21	Convis: A Toolbox to Fit and Simulate Filter-Based Models of Early Visual Processing. Frontiers in Neuroinformatics, 2018, 12, 9.	1.3	3
22	First-Spike-Based Visual Categorization Using Reward-Modulated STDP. IEEE Transactions on Neural Networks and Learning Systems, 2018, 29, 6178-6190.	7.2	113
23	Representation learning using event-based STDP. Neural Networks, 2018, 105, 294-303.	3.3	21
24	Visual stimulation quenches global alpha range activity in awake primate V4: a case study. Neurophotonics, 2017, 4, 031222.	1.7	1
25	Hardware implementation of convolutional STDP for on-line visual feature learning. , 2017, , .		22
26	Live demonstration: Hardware implementation of convolutional STDP for on-line visual feature learning. , 2017, , .		2
27	Object Categorization in Finer Levels Relies More on Higher Spatial Frequencies and Takes Longer. Frontiers in Psychology, 2017, 8, 1261.	1.1	12
28	Unsupervised learning of repeating patterns using a novel STDP based algorithm. Journal of Vision, 2017, 17, 1079.	0.1	1
29	Rank Order Coding: a Retinal Information Decoding Strategy Revealed by Large-Scale Multielectrode Array Retinal Recordings. ENeuro, 2016, 3, ENEURO.0134-15.2016.	0.9	36
30	Humans and Deep Networks Largely Agree on Which Kinds of Variation Make Object Recognition Harder. Frontiers in Computational Neuroscience, 2016, 10, 92.	1.2	23
31	Acquisition of visual features through probabilistic spike-timing-dependent plasticity. , 2016, , .		23
32	Microsaccades enable efficient synchrony-based coding in the retina: a simulation study. Scientific Reports, 2016, 6, 24086.	1.6	21
33	Deep Networks Can Resemble Human Feed-forward Vision in Invariant Object Recognition. Scientific Reports, 2016, 6, 32672.	1.6	122
34	Bio-inspired unsupervised learning of visual features leads to robust invariant object recognition. Neurocomputing, 2016, 205, 382-392.	3.5	96
35	Oscillations can reconcile slowly changing stimuli with short neuronal integration and STDP timescales. Network: Computation in Neural Systems, 2014, 25, 85-96.	2.2	2
36	Rapid neural coding in the mouse retina with the first wave of spikes. BMC Neuroscience, 2014, 15, .	0.8	0

#	ARTICLE	IF	CITATIONS
37	Microsaccades enable efficient synchrony-based visual feature learning and detection. BMC Neuroscience, 2014, 15, .	0.8	0
38	Optimal spike pattern v.s. noise separation by neurons equipped with STDP. BMC Neuroscience, 2013, 14, .	0.8	0
39	Neural variability, or lack thereof. Frontiers in Computational Neuroscience, 2013, 7, 7.	1.2	61
40	Network Bursting Dynamics in Excitatory Cortical Neuron Cultures Results from the Combination of Different Adaptive Mechanism. PLoS ONE, 2013, 8, e75824.	1.1	36
41	STDP and STDP variations with memristors for spiking neuromorphic learning systems. Frontiers in Neuroscience, 2013, 7, 2.	1.4	368
42	Relative spike time coding and STDP-based orientation selectivity in the early visual system in natural continuous and saccadic vision: a computational model. Journal of Computational Neuroscience, 2012, 32, 425-441.	0.6	36
43	The Timing of Vision â€“ How Neural Processing Links to Different Temporal Dynamics. Frontiers in Psychology, 2011, 2, 151.	1.1	10
44	On Spike-Timing-Dependent-Plasticity, Memristive Devices, and Building a Self-Learning Visual Cortex. Frontiers in Neuroscience, 2011, 5, 26.	1.4	364
45	STDP Allows Fast Rate-Modulated Coding with Poisson-Like Spike Trains. PLoS Computational Biology, 2011, 7, e1002231.	1.5	33
46	The Role of Rhythmic Neural Synchronization in Rest and Task Conditions. Frontiers in Human Neuroscience, 2011, 5, 4.	1.0	39
47	Learning to recognize objects using waves of spikes and Spike Timing-Dependent Plasticity. , 2010, , .		31
48	Pattern learning using spike-timing-dependent plasticity: a theoretical approach. BMC Neuroscience, 2009, 10, .	0.8	0
49	Competitive STDP-Based Spike Pattern Learning. Neural Computation, 2009, 21, 1259-1276.	1.3	248
50	Oscillations, Phase-of-Firing Coding, and Spike Timing-Dependent Plasticity: An Efficient Learning Scheme. Journal of Neuroscience, 2009, 29, 13484-13493.	1.7	153
51	Spike Timing Dependent Plasticity Finds the Start of Repeating Patterns in Continuous Spike Trains. PLoS ONE, 2008, 3, e1377.	1.1	224
52	Unsupervised Learning of Visual Features through Spike Timing Dependent Plasticity. PLoS Computational Biology, 2007, 3, e31.	1.5	409
53	Safety Enhancement by PDA: Two Novel Examples. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 259-263.	0.4	1