Karlheinz Meier

List of Publications by Year
in descending order

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40	1,755	623188 14	676716 22
papers	citations	h-index	g-index

40	40	40	1322
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Cortical oscillations support sampling-based computations in spiking neural networks. PLoS Computational Biology, 2022, 18, e1009753.	1.5	8
2	Structural plasticity on an accelerated analog neuromorphic hardware system. Neural Networks, 2021, 133, 11-20.	3.3	10
3	Control of criticality and computation in spiking neuromorphic networks with plasticity. Nature Communications, 2020, 11, 2853.	5.8	70
4	Criticality or Supersymmetry Breaking?. Symmetry, 2020, 12, 805.	1.1	7
5	Stochasticity from function â€" Why the Bayesian brain may need no noise. Neural Networks, 2019, 119, 200-213.	3.3	19
6	Neuromorphic Hardware Learns to Learn. Frontiers in Neuroscience, 2019, 13, 483.	1.4	35
7	Demonstrating Advantages of Neuromorphic Computation: A Pilot Study. Frontiers in Neuroscience, 2019, 13, 260.	1.4	83
8	Deterministic networks for probabilistic computing. Scientific Reports, 2019, 9, 18303.	1.6	10
9	Accelerated Physical Emulation of Bayesian Inference in Spiking Neural Networks. Frontiers in Neuroscience, 2019, 13, 1201.	1.4	22
10	An Accelerated LIF Neuronal Network Array for a Large-Scale Mixed-Signal Neuromorphic Architecture. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 4299-4312.	3.5	59
11	A Mixed-Signal Structured AdEx Neuron for Accelerated Neuromorphic Cores. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 1027-1037.	2.7	38
12	Spiking neurons with short-term synaptic plasticity form superior generative networks. Scientific Reports, 2018, 8, 10651.	1.6	20
13	A Basic Phase Diagram of Neuronal Dynamics. Neural Computation, 2018, 30, 2418-2438.	1.3	2
14	Demonstrating Hybrid Learning in a Flexible Neuromorphic Hardware System. IEEE Transactions on Biomedical Circuits and Systems, 2017, 11, 128-142.	2.7	87
15	Special report : Can we copy the brain? - The brain as computer. IEEE Spectrum, 2017, 54, 28-33.	0.5	13
16	Neuromorphic hardware in the loop: Training a deep spiking network on the BrainScaleS wafer-scale system. , 2017, , .		99
17	From LIF to AdEx neuron models: Accelerated analog 65 nm CMOS implementation. , 2017, , .		5
18	Full wafer redistribution and wafer embedding as key technologies for a multi-scale neuromorphic hardware cluster. , 2017, , .		4

#	Article	IF	Citations
19	An accelerated analog neuromorphic hardware system emulating NMDA- and calcium-based non-linear dendrites. , 2017, , .		50
20	Robustness from structure: Inference with hierarchical spiking networks on analog neuromorphic hardware. , 2017, , .		1
21	Effect of Heterogeneity on Decorrelation Mechanisms in Spiking Neural Networks: A Neuromorphic-Hardware Study. Physical Review X, 2016, 6, .	2.8	15
22	Stochastic inference with spiking neurons in the high-conductance state. Physical Review E, 2016, 94, 042312.	0.8	46
23	A highly tunable 65-nm CMOS LIF neuron for a large scale neuromorphic system. , 2016, , .		19
24	A highly tunable 65-nm CMOS LIF neuron for a large scale neuromorphic system. , 2016, , .		0
25	A mixed-signal universal neuromorphic computing system. , 2015, , .		24
26	The high-conductance state enables neural sampling in networks of LIF neurons. BMC Neuroscience, 2015, 16, .	0.8	5
27	Probabilistic inference in discrete spaces can be implemented into networks of LIF neurons. Frontiers in Computational Neuroscience, 2015, 9, 13.	1.2	17
28	Characterization and Compensation of Network-Level Anomalies in Mixed-Signal Neuromorphic Modeling Platforms. PLoS ONE, 2014, 9, e108590.	1.1	42
29	An analog dynamic memory array for neuromorphic hardware. , 2013, , .		16
30	Neuromorphic learning towards nano second precision. , 2013, , .		8
31	Six Networks on a Universal Neuromorphic Computing Substrate. Frontiers in Neuroscience, 2013, 7, 11.	1.4	131
32	Live demonstration: A scaled-down version of the BrainScaleS wafer-scale neuromorphic system. , 2012, , .		41
33	Simulator-like exploration of cortical network architectures with a mixed-signal VLSI system. , 2010, , .		8
34	A wafer-scale neuromorphic hardware system for large-scale neural modeling. , 2010, , .		449
35	Live demonstration: Simulator-like exploration of cortical network architectures with a mixed-signal VLSI system. , 2010, , .		0
36	High-conductance states on a neuromorphic hardware system. , 2009, , .		4

#	Article	IF	Citations
37	Wafer-scale integration of analog neural networks. , 2008, , .		175
38	Realizing biological spiking network models in a configurable wafer-scale hardware system. , 2008, , .		40
39	Modeling Synaptic Plasticity within Networks of Highly Accelerated I&F Neurons. , 2007, , .		56
40	A Mixed-Mode Analog Neural Network Using Current-Steering Synapses. Analog Integrated Circuits and Signal Processing, 2004, 38, 233-244.	0.9	17