Friedrich T Sommer

List of Publications by Year
in descending order

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51 papers	2,330 citations	257450 24 h-index	233421 45 g-index
53 all docs	53 docs citations	53 times ranked	2379 citing authors

#	Article	IF	Citations
1	Cellular Automata Can Reduce Memory Requirements of Collective-State Computing. IEEE Transactions on Neural Networks and Learning Systems, 2022, 33, 2701-2713.	11.3	7
2	Integer Factorization with Compositional Distributed Representations. , 2022, , .		3
3	Computing on Functions Using Randomized Vector Representations (in brief). , 2022, , .		14
4	Efficient Neuromorphic Signal Processing with Resonator Neurons. Journal of Signal Processing Systems, 2022, 94, 917-927.	2.1	4
5	Efficient Neuromorphic Signal Processing with Loihi 2. , 2021, , .		61
6	Resonator Networks, 1: An Efficient Solution for Factoring High-Dimensional, Distributed Representations of Data Structures. Neural Computation, 2020, 32, 2311-2331.	2.2	16
7	Resonator Networks, 2: Factorization Performance and Capacity Compared to Optimization-Based Methods. Neural Computation, 2020, 32, 2332-2388.	2.2	13
8	NWB Query Engines: Tools to Search Data Stored in Neurodata Without Borders Format. Frontiers in Neuroinformatics, 2020, 14, 27.	2.5	2
9	Visual Information Processing in the Ventral Division of the Mouse Lateral Geniculate Nucleus of the Thalamus. Journal of Neuroscience, 2020, 40, 5019-5032.	3.6	18
10	Robust computation with rhythmic spike patterns. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 18050-18059.	7.1	38
11	A Theory of Sequence Indexing and Working Memory in Recurrent Neural Networks. Neural Computation, 2018, 30, 1449-1513.	2.2	58
12	Spatial scale of receptive fields in the visual sector of the cat thalamic reticular nucleus. Nature Communications, 2017, 8, 800.	12.8	17
13	Sparse coding of ECoG signals identifies interpretable components for speech control in human sensorimotor cortex. , 2017, 2017, 3636-3639.		2
14	Structural Plasticity, Effectual Connectivity, and Memory in Cortex. Frontiers in Neuroanatomy, 2016, 10, 63.	1.7	27
15	Synaptic Contributions to Receptive Field Structure and Response Properties in the Rodent Lateral Geniculate Nucleus of the Thalamus. Journal of Neuroscience, 2016, 36, 10949-10963.	3.6	34
16	Enabling an Open Data Ecosystem for the Neurosciences. Neuron, 2016, 92, 617-621.	8.1	29
17	How Inhibitory Circuits in the Thalamus Serve Vision. Annual Review of Neuroscience, 2015, 38, 309-329.	10.7	77
18	When Can Dictionary Learning Uniquely Recover Sparse Data From Subsamples?. IEEE Transactions on Information Theory, 2015, 61, 6290-6297.	2.4	11

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19	Neurodata Without Borders: Creating a Common Data Format for Neurophysiology. Neuron, 2015, 88, 629-634.	8.1	171
20	Spatially Distributed Local Fields in the Hippocampus Encode Rat Position. Science, 2014, 344, 626-630.	12.6	124
21	Statistical Wiring of Thalamic Receptive Fields Optimizes Spatial Sampling of the Retinal Image. Neuron, 2014, 81, 943-956.	8.1	60
22	Structural Synaptic Plasticity Has High Memory Capacity and Can Explain Graded Amnesia, Catastrophic Forgetting, and the Spacing Effect. PLoS ONE, 2014, 9, e96485.	2.5	37
23	Neurons in the thalamic reticular nucleus are selective for diverse and complex visual features. Frontiers in Integrative Neuroscience, 2012, 6, 118.	2.1	22
24	Associative Memory and Learning. , 2012, , 340-342.		0
25	Thalamic interneurons and relay cells use complementary synaptic mechanisms for visual processing. Nature Neuroscience, 2011, 14, 224-231.	14.8	49
26	Inhibitory circuits for visual processing in thalamus. Current Opinion in Neurobiology, 2011, 21, 726-733.	4.2	48
27	Exploring the function of neural oscillations in early sensory systems. Frontiers in Neuroscience, 2010, 4, 53.	2.8	57
28	Memory Capacities for Synaptic and Structural Plasticity. Neural Computation, 2010, 22, 289-341.	2.2	107
29	Adaptive compressed sensing — A new class of self-organizing coding models for neuroscience. , 2010, , .		9
30	Recoding of Sensory Information across the Retinothalamic Synapse. Journal of Neuroscience, 2010, 30, 13567-13577.	3.6	25
31	Retinal oscillations carry visual information to cortex. Frontiers in Systems Neuroscience, 2009, 3, 4.	2.5	72
32	CRCNS.ORG: a repository of high-quality data sets and tools for computational neuroscience. BMC Neuroscience, 2009, 10, .	1.9	9
33	Learning Bimodal Structure in Audioâ€“Visual Data. IEEE Transactions on Neural Networks, 2009, 20, 1898-1910.	4.2	32
34	Information transmission in oscillatory neural activity. Biological Cybernetics, 2008, 99, 403-416.	1.3	15
35	Feedforward Excitation and Inhibition Evoke Dual Modes of Firing in the Cat's Visual Thalamus during Naturalistic Viewing. Neuron, 2007, 55, 465-478.	8.1	101
36	A network that uses few active neurones to code visual input predicts the diverse shapes of cortical receptive fields. Journal of Computational Neuroscience, 2007, 22, 135-146.	1.0	146

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37	Can neural models of cognition benefit from the advantages of connectionism?. Behavioral and Brain Sciences, 2006, 29, 86-87.	0.7	1
38	Storing and restoring visual input with collaborative rank coding and associative memory. Neurocomputing, 2006, 69, 1219-1223.	5.9	17
39	Receptive field structure varies with layer in the primary visual cortex. Nature Neuroscience, 2005, 8, 372-379.	14.8	173
40	Improving binding potential analysis in [11C]raclopride PET studies using cluster analysis. Medical Physics, 2004, 31, 902-906.	3.0	6
41	Models of distributed associative memory networks in the brain. Theory in Biosciences, 2003, 122, 55-69.	1.4	25
42	Synaptic plasticity, conduction delays, and inter-areal phase relations of spike activity in a model of reciprocally connected areas. Neurocomputing, 2003, 52-54, 301-306.	5.9	24
43	Functionally distinct inhibitory neurons at the first stage of visual cortical processing. Nature Neuroscience, 2003, 6, 1300-1308.	14.8	161
44	Associative memory in networks of spiking neurons. Neural Networks, 2001, 14, 825-834.	5.9	63
45	Associative memory in a pair of cortical cell groups with reciprocal projections. Neurocomputing, 2001, 38-40, 1575-1580.	5.9	4
46	On cell assemblies in a cortical column. Neurocomputing, 2000, 32-33, 517-522.	5.9	6
47	Modelling studies on the computational function of fast temporal structure in cortical circuit activity. Journal of Physiology (Paris), 2000, 94, 473-488.	2.1	38
48	Improved bidirectional retrieval of sparse patterns stored by Hebbian learning. Neural Networks, 1999, 12, 281-297.	5.9	63
49	Dynamical Cluster Analysis of Cortical fMRI Activation. NeuroImage, 1999, 9, 477-489.	4.2	60
50	Bidirectional Completion of Cell Assemblies in The Cortex. , 1998, , 531-536.		5
51	Associative Data Storage and Retrieval in Neural Networks. Physics of Neural Networks, 1996, , 79-118.	0.1	27