

Friedrich T Sommer

List of Publications by Year in descending order

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Version: 2024-02-01

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	Receptive field structure varies with layer in the primary visual cortex. <i>Nature Neuroscience</i> , 2005, 8, 372-379.	14.8	173
2	Neurodata Without Borders: Creating a Common Data Format for Neurophysiology. <i>Neuron</i> , 2015, 88, 629-634.	8.1	171
3	Functionally distinct inhibitory neurons at the first stage of visual cortical processing. <i>Nature Neuroscience</i> , 2003, 6, 1300-1308.	14.8	161
4	A network that uses few active neurones to code visual input predicts the diverse shapes of cortical receptive fields. <i>Journal of Computational Neuroscience</i> , 2007, 22, 135-146.	1.0	146
5	Spatially Distributed Local Fields in the Hippocampus Encode Rat Position. <i>Science</i> , 2014, 344, 626-630.	12.6	124
6	Memory Capacities for Synaptic and Structural Plasticity. <i>Neural Computation</i> , 2010, 22, 289-341.	2.2	107
7	Feedforward Excitation and Inhibition Evoke Dual Modes of Firing in the Cat's Visual Thalamus during Naturalistic Viewing. <i>Neuron</i> , 2007, 55, 465-478.	8.1	101
8	How Inhibitory Circuits in the Thalamus Serve Vision. <i>Annual Review of Neuroscience</i> , 2015, 38, 309-329.	10.7	77
9	Retinal oscillations carry visual information to cortex. <i>Frontiers in Systems Neuroscience</i> , 2009, 3, 4.	2.5	72
10	Improved bidirectional retrieval of sparse patterns stored by Hebbian learning. <i>Neural Networks</i> , 1999, 12, 281-297.	5.9	63
11	Associative memory in networks of spiking neurons. <i>Neural Networks</i> , 2001, 14, 825-834.	5.9	63
12	Efficient Neuromorphic Signal Processing with Loihi 2. , 2021, , .		61
13	Dynamical Cluster Analysis of Cortical fMRI Activation. <i>NeuroImage</i> , 1999, 9, 477-489.	4.2	60
14	Statistical Wiring of Thalamic Receptive Fields Optimizes Spatial Sampling of the Retinal Image. <i>Neuron</i> , 2014, 81, 943-956.	8.1	60
15	A Theory of Sequence Indexing and Working Memory in Recurrent Neural Networks. <i>Neural Computation</i> , 2018, 30, 1449-1513.	2.2	58
16	Exploring the function of neural oscillations in early sensory systems. <i>Frontiers in Neuroscience</i> , 2010, 4, 53.	2.8	57
17	Thalamic interneurons and relay cells use complementary synaptic mechanisms for visual processing. <i>Nature Neuroscience</i> , 2011, 14, 224-231.	14.8	49
18	Inhibitory circuits for visual processing in thalamus. <i>Current Opinion in Neurobiology</i> , 2011, 21, 726-733.	4.2	48

#	ARTICLE	IF	CITATIONS
19	Modelling studies on the computational function of fast temporal structure in cortical circuit activity. <i>Journal of Physiology (Paris)</i> , 2000, 94, 473-488.	2.1	38
20	Robust computation with rhythmic spike patterns. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 18050-18059.	7.1	38
21	Structural Synaptic Plasticity Has High Memory Capacity and Can Explain Graded Amnesia, Catastrophic Forgetting, and the Spacing Effect. <i>PLoS ONE</i> , 2014, 9, e96485.	2.5	37
22	Synaptic Contributions to Receptive Field Structure and Response Properties in the Rodent Lateral Geniculate Nucleus of the Thalamus. <i>Journal of Neuroscience</i> , 2016, 36, 10949-10963.	3.6	34
23	Learning Bimodal Structure in Audio-Visual Data. <i>IEEE Transactions on Neural Networks</i> , 2009, 20, 1898-1910.	4.2	32
24	Enabling an Open Data Ecosystem for the Neurosciences. <i>Neuron</i> , 2016, 92, 617-621.	8.1	29
25	Structural Plasticity, Effectual Connectivity, and Memory in Cortex. <i>Frontiers in Neuroanatomy</i> , 2016, 10, 63.	1.7	27
26	Associative Data Storage and Retrieval in Neural Networks. <i>Physics of Neural Networks</i> , 1996, , 79-118.	0.1	27
27	Models of distributed associative memory networks in the brain. <i>Theory in Biosciences</i> , 2003, 122, 55-69.	1.4	25
28	Recoding of Sensory Information across the Retinothalamic Synapse. <i>Journal of Neuroscience</i> , 2010, 30, 13567-13577.	3.6	25
29	Synaptic plasticity, conduction delays, and inter-areal phase relations of spike activity in a model of reciprocally connected areas. <i>Neurocomputing</i> , 2003, 52-54, 301-306.	5.9	24
30	Neurons in the thalamic reticular nucleus are selective for diverse and complex visual features. <i>Frontiers in Integrative Neuroscience</i> , 2012, 6, 118.	2.1	22
31	Visual Information Processing in the Ventral Division of the Mouse Lateral Geniculate Nucleus of the Thalamus. <i>Journal of Neuroscience</i> , 2020, 40, 5019-5032.	3.6	18
32	Storing and restoring visual input with collaborative rank coding and associative memory. <i>Neurocomputing</i> , 2006, 69, 1219-1223.	5.9	17
33	Spatial scale of receptive fields in the visual sector of the cat thalamic reticular nucleus. <i>Nature Communications</i> , 2017, 8, 800.	12.8	17
34	Resonator Networks, 1: An Efficient Solution for Factoring High-Dimensional, Distributed Representations of Data Structures. <i>Neural Computation</i> , 2020, 32, 2311-2331.	2.2	16
35	Information transmission in oscillatory neural activity. <i>Biological Cybernetics</i> , 2008, 99, 403-416.	1.3	15
36	Computing on Functions Using Randomized Vector Representations (in brief). , 2022, , .		14

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37	Resonator Networks, 2: Factorization Performance and Capacity Compared to Optimization-Based Methods. <i>Neural Computation</i> , 2020, 32, 2332-2388.	2.2	13
38	When Can Dictionary Learning Uniquely Recover Sparse Data From Subsamples?. <i>IEEE Transactions on Information Theory</i> , 2015, 61, 6290-6297.	2.4	11
39	CRCNS.ORG: a repository of high-quality data sets and tools for computational neuroscience. <i>BMC Neuroscience</i> , 2009, 10, .	1.9	9
40	Adaptive compressed sensing — A new class of self-organizing coding models for neuroscience. , 2010, , .		9
41	Cellular Automata Can Reduce Memory Requirements of Collective-State Computing. <i>IEEE Transactions on Neural Networks and Learning Systems</i> , 2022, 33, 2701-2713.	11.3	7
42	On cell assemblies in a cortical column. <i>Neurocomputing</i> , 2000, 32-33, 517-522.	5.9	6
43	Improving binding potential analysis in [11C]raclopride PET studies using cluster analysis. <i>Medical Physics</i> , 2004, 31, 902-906.	3.0	6
44	Bidirectional Completion of Cell Assemblies in The Cortex. , 1998, , 531-536.		5
45	Associative memory in a pair of cortical cell groups with reciprocal projections. <i>Neurocomputing</i> , 2001, 38-40, 1575-1580.	5.9	4
46	Efficient Neuromorphic Signal Processing with Resonator Neurons. <i>Journal of Signal Processing Systems</i> , 2022, 94, 917-927.	2.1	4
47	Integer Factorization with Compositional Distributed Representations. , 2022, , .		3
48	Sparse coding of ECoG signals identifies interpretable components for speech control in human sensorimotor cortex. , 2017, 2017, 3636-3639.		2
49	NWB Query Engines: Tools to Search Data Stored in Neurodata Without Borders Format. <i>Frontiers in Neuroinformatics</i> , 2020, 14, 27.	2.5	2
50	Can neural models of cognition benefit from the advantages of connectionism?. <i>Behavioral and Brain Sciences</i> , 2006, 29, 86-87.	0.7	1
51	Associative Memory and Learning. , 2012, , 340-342.		0