Stefano Fusi

List of Publications by Citations

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109 papers	6,033 citations	36 h-index	77 g-index
121 ext. papers	7,679 ext. citations	8.6 avg, IF	6.05 L-index

#	Paper	IF	Citations
109	The importance of mixed selectivity in complex cognitive tasks. *Nature*, **2013**, 497, 585-90	50.4	787
108	Hippocampal-prefrontal input supports spatial encoding in working memory. *Nature*, **2015**, 522, 309-14	50.4	394
107	Cascade models of synaptically stored memories. *Neuron*, **2005**, 45, 599-611	13.9	340
106	Emotion, cognition, and mental state representation in amygdala and prefrontal cortex. *Annual Review of Neuroscience*, **2010**, 33, 173-202	17	319
105	Why neurons mix: high dimensionality for higher cognition. *Current Opinion in Neurobiology*, **2016**, 37, 66-74	7.6	277
104	Learning real-world stimuli in a neural network with spike-driven synaptic dynamics. *Neural Computation*, **2007**, 19, 2881-912	2.9	246
103	Learning in Neural Networks with Material Synapses. *Neural Computation*, **1994**, 6, 957-982	2.9	194
102	Neocortical pyramidal cells respond as integrate-and-fire neurons to in vivo-like input currents. *Journal of Neurophysiology*, **2003**, 90, 1598-612	3.2	185
101	Spike-driven synaptic plasticity: theory, simulation, VLSI implementation. *Neural Computation*, **2000** , 12, 2227-58	2.9	164
100	Real-Time Classification of Complex Patterns Using Spike-Based Learning in Neuromorphic VLSI. *IEEE Transactions on Biomedical Circuits and Systems*, **2009**, 3, 32-42	5.1	154
99	Limits on the memory storage capacity of bounded synapses. *Nature Neuroscience*, **2007**, 10, 485-93	25.5	136
98	A VLSI recurrent network of integrate-and-fire neurons connected by plastic synapses with long-term memory. *IEEE Transactions on Neural Networks*, **2003**, 14, 1297-307		131
97	A neural circuit model of flexible sensorimotor mapping: learning and forgetting on multiple timescales. *Neuron*, **2007**, 54, 319-33	13.9	124
96	Internal representation of task rules by recurrent dynamics: the importance of the diversity of neural responses. *Frontiers in Computational Neuroscience*, **2010**, 4, 24	3.5	123
95	Climbing neuronal activity as an event-based cortical representation of time. *Journal of Neuroscience*, **2004**, 24, 3295-303	6.6	120
94	Collective behavior of networks with linear (VLSI) integrate-and-fire neurons. *Neural Computation*, **1999**, 11, 633-52	2.9	115
93	The sparseness of mixed selectivity neurons controls the generalization-discrimination trade-off. *Journal of Neuroscience*, **2013**, 33, 3844-56	6.6	108

92	Inter-trial neuronal activity in inferior temporal cortex: a putative vehicle to generate long-term visual associations. *Nature Neuroscience*, **1998**, 1, 310-7	25.5	107
91	Hebbian spike-driven synaptic plasticity for learning patterns of mean firing rates. *Biological Cybernetics*, **2002**, 87, 459-70	2.8	101
90	Abstract Context Representations in Primate Amygdala and Prefrontal Cortex. *Neuron*, **2015**, 87, 869-81	13.9	95
89	Multiple time scales of temporal response in pyramidal and fast spiking cortical neurons. *Journal of Neurophysiology*, **2006**, 96, 3448-64	3.2	84
88	Adult neurogenesis in the mammalian hippocampus: why the dentate gyrus?. *Learning and Memory*, **2013**, 20, 710-29	2.8	83
87	Computational principles of synaptic memory consolidation. *Nature Neuroscience*, **2016**, 19, 1697-1706	25.5	82
86	Hebbian-inspired rewiring of a random network replicates pattern of selectivity seen in PFC. *BMC Neuroscience*, **2014**, 15,	3.2	78
85	Scalability properties of multimodular networks with dynamic gating. *BMC Neuroscience*, **2013**, 14,	3.2	78
84	Memory capacity of a random, recurrently connected network of neurons with multiple, biologically realistic facilitation and adaptation profiles. *BMC Neuroscience*, **2011**, 12,	3.2	78
83	The dynamical response properties of neocortical neurons to temporally modulated noisy inputs in vitro. *Cerebral Cortex*, **2008**, 18, 2086-97	5.1	77
82	Paradigmatic working memory (attractor) cell in IT cortex. *Neural Computation*, **1997**, 9, 1071-92	2.9	75
81	Minimal models of adapted neuronal response to in vivo-like input currents. *Neural Computation*, **2004**, 16, 2101-24	2.9	74
80	Data on first recurrence after treatment for malignant melanoma in a large patient population. *Plastic and Reconstructive Surgery*, **1993**, 91, 94-8	2.7	68
79	Modelling the formation of working memory with networks of integrate-and-fire neurons connected by plastic synapses. *Journal of Physiology (Paris)*, **2003**, 97, 659-81		52
78	Convergence of stochastic learning in perceptrons with binary synapses. *Physical Review E*, **2005**, 71, 061907	2.4	46
77	The Geometry of Abstraction in the Hippocampus and Prefrontal Cortex. *Cell*, **2020**, 183, 954-967.e21	56.2	45
76	Slow stochastic Hebbian learning of classes of stimuli in a recurrent neural network. *Network: Computation in Neural Systems*, **1998**, 9, 123-152	0.7	43
75	Event-driven simulation of spiking neurons with stochastic dynamics. *Neural Computation*, **2003**, 15, 811-30	2.9	38

74	A Distributed Neural Code in the Dentate Gyrus and in CA1. *Neuron*, **2020**, 107, 703-716.e4	13.9	36
73	The response of cortical neurons to in vivo-like input current: theory and experiment : I. Noisy inputs with stationary statistics. *Biological Cybernetics*, **2008**, 99, 279-301	2.8	35
72	Efficient partitioning of memory systems and its importance for memory consolidation. *PLoS Computational Biology*, **2013**, 9, e1003146	5	34
71	Attractor concretion as a mechanism for the formation of context representations. *NeuroImage*, **2010**, 52, 833-47	7.9	34
70	Electronic implementation of an analogue attractor neural network with stochastic learning. *Network: Computation in Neural Systems*, **1995**, 6, 125-157	0.7	33
69	Slow stochastic Hebbian learning of classes of stimuli in a recurrent neural network		32
68	Low-dimensional dynamics for working memory and time encoding. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 23021-23032	11.5	31
67	Forming classes by stimulus frequency: behavior and theory. *Proceedings of the National Academy of Sciences of the United States of America*, **2001**, 98, 4265-70	11.5	30
66	Learning only when necessary: better memories of correlated patterns in networks with bounded synapses. *Neural Computation*, **2005**, 17, 2106-38	2.9	29
65	Context-dependent representations of objects and space in the primate hippocampus during virtual navigation. *Nature Neuroscience*, **2020**, 23, 103-112	25.5	29
64	Constraints on learning in dynamic synapses. *Network: Computation in Neural Systems*, **1992**, 3, 443-464	0.7	28
63	Hebbian Learning in a Random Network Captures Selectivity Properties of the Prefrontal Cortex. *Journal of Neuroscience*, **2017**, 37, 11021-11036	6.6	24
62	Flexible recruitment of memory-based choice representations by the human medial frontal cortex. *Science*, **2020**, 368,	33.3	24
61	The response of cortical neurons to in vivo-like input current: theory and experiment: II. Time-varying and spatially distributed inputs. *Biological Cybernetics*, **2008**, 99, 303-18	2.8	24
60	Coding of social novelty in the hippocampal CA2 region and its disruption and rescue in a 22q11.2 microdeletion mouse model. *Nature Neuroscience*, **2020**, 23, 1365-1375	25.5	23
59	Hippocampal Network Reorganization Underlies the Formation of a Temporal Association Memory. *Neuron*, **2020**, 107, 283-291.e6	13.9	22
58	Learning to attend: modeling the shaping of selectivity in infero-temporal cortex in a categorization task. *Biological Cybernetics*, **2006**, 94, 351-65	2.8	20
57	Spike-driven synaptic plasticity for learning correlated patterns of mean firing rates. *Reviews in the Neurosciences*, **2003**, 14, 73-84	4.7	20

56	Constraints on learning in dynamic synapses		19
55	Energy-Efficient Neuromorphic Classifiers. *Neural Computation*, **2016**, 28, 2011-44	2.9	19
54	Eluding oblivion with smart stochastic selection of synaptic updates. *Chaos*, **2006**, 16, 026112	3.3	18
53	Limber neurons for a nimble mind. *Neuron*, **2013**, 78, 211-3	13.9	16
52	A VLSI spike-driven dynamic synapse which learns only when necessary		16
51	Spike-based learning in VLSI networks of integrate-and-fire neurons **2007**,		16
50	Long memory lifetimes require complex synapses and limited sparseness. *Frontiers in Computational Neuroscience*, **2007**, 1, 7	3.5	15
49	Deviation from the matching law reflects an optimal strategy involving learning over multiple timescales. *Nature Communications*, **2019**, 10, 1466	17.4	14
48	Learning flexible sensori-motor mappings in a complex network. *Biological Cybernetics*, **2009**, 100, 147-58	2.8	14
47	The geometry of abstraction in hippocampus and pre-frontal cortex		14
46	Comparison between networks of conductance- and current-driven neurons: stationary spike rates and subthreshold depolarization. *Neurocomputing*, **2004**, 58-60, 253-258	5.4	11
45	Multiple views of the response of an ensemble of spectro-temporal features support concurrent classification of utterance, prosody, sex and speaker identity. *Network: Computation in Neural Systems*, **2005**, 16, 285-300	0.7	11
44	Synaptic encoding of temporal contiguity. *Frontiers in Computational Neuroscience*, **2013**, 7, 32	3.5	10
43	Sensorimotor strategies and neuronal representations for shape discrimination. *Neuron*, **2021**, 109, 2308-2325.e10	13.9	9
42	Neuroscience. A quiescent working memory. *Science*, **2008**, 319, 1495-6	33.3	8
41	Dynamical regimes in neural network models of matching behavior. *Neural Computation*, **2013**, 25, 3093-112	2.9	7
40	Learning selective top-down control enhances performance in a visual categorization task. *Journal of Neurophysiology*, **2012**, 108, 3124-37	3.2	6
39	Long term memory: Encoding and storing strategies of the brain. *Neurocomputing*, **2001**, 38-40, 1223-1228	5.4	6

38	A model of expectation effects in inferior temporal cortex. *Neurocomputing*, **2001**, 38-40, 1533-1540	5.4	6
37	Slow stochastic learning with global inhibition: a biological solution to the binary perceptron problem. *Neurocomputing*, **2004**, 58-60, 321-326	5.4	5
36	Prototype extraction in material attractor neural networks with stochastic dynamic learning **1995**, 2492, 1027		4
35	Electronic implementation of an analogue attractor neural network with stochastic learning		4
34	Learning fast and slow: deviations from the matching law can reflect an optimal strategy under uncertainty		4
33	A distributed neural code in the dentate gyrus and in CA1		4
32	Low dimensional dynamics for working memory and time encoding		4
31	The neural code for face memory		4
30	Perceiving Category Set Statistics On-the-fly. *Journal of Vision*, **2019**, 19, 225a	0.4	3
29	The sensorimotor strategies and neuronal representations of tactile shape discrimination in mice		3
28	Are place cells just memory cells? Memory compression leads to spatial tuning and history dependence		3
27	Adolescent thalamic inhibition leads to long-lasting impairments in prefrontal cortex function.. *Nature Neuroscience*, **2022**,	25.5	3
26	Modeling networks with linear (VLSI) integrate-and-fire neurons. *Lecture Notes in Computer Science*, **1997**, 67-72	0.9	2
25	LANN27: an electronic implementation of an analog attractor neural network with stochastic learning **1995**,		2
24	Place cells may simply be memory cells: Memory compression leads to spatial tuning and history dependence.. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	2
23	Hebbian Learning in a Random Network Captures Selectivity Properties of Prefrontal Cortex		2
22	Firing Rate Adaptation without Losing Sensitivity to Input Fluctuations. *Lecture Notes in Computer Science*, **2002**, 180-185	0.9	2
21	Efficient online learning with low-precision synaptic variables **2017**,		1

20	Complex synapses as efficient memory systems. *BMC Neuroscience*, **2015**, 16,	3.2	1
19	Robust classification of correlated patterns with a neuromorphic VLSI network of spiking neurons **2007**,		1
18	LEARNING CONSTRAINTS IN STORAGE CAPACITY IN NETWORKS WITH DYNAMIC SYNAPSES. *International Journal of Neural Systems*, **1992**, 03, 3-11	6.2	1
17	The geometry of hippocampal CA2 representations enables abstract coding of social familiarity and identity		1
16	How we perceive ensemble statistics and how they serve memory representation. *Journal of Vision*, **2020**, 20, 516	0.4	1
15	Abstract representations emerge naturally in neural networks trained to perform multiple tasks		1
14	Flexible recruitment of memory-based choice representations by human medial-frontal cortex		1
13	Analog VLSI implementation of a spike driven stochastic dynamical synapse. *Perspectives in Neural Computing*, **1998**, 475-480		1
12	Queuing theory for spike driven synaptic dynamics. *Perspectives in Neural Computing*, **1998**, 117-122		1
11	Signatures of rapid synaptic learning in the hippocampus during novel experiences		1
10	The geometry of cortical representations of touch in rodents		1
9	Perceiving ensemble statistics of novel image sets. *Attention, Perception, and Psychophysics*, **2021**, 83, 1312-1328	2	1
8	Non-monotonic Current-to-Rate Response Function in a Novel Integrate-and-Fire Model Neuron. *Lecture Notes in Computer Science*, **2002**, 141-146	0.9	1
7	When NMDA Receptor Conductances Increase Inter- spike Interval Variability. *Lecture Notes in Computer Science*, **2002**, 235-240	0.9	1
6	Spike- Driven Synaptic Plasticity for Learning Correlated Patterns of Asynchronous Activity. *Lecture Notes in Computer Science*, **2002**, 241-247	0.9	1
5	Biological underpinnings for lifelong learning machines. *Nature Machine Intelligence*, **2022**, 4, 196-210	22.5	1
4	Neural Classifiers with Limited Connectivity and Recurrent Readouts. *Journal of Neuroscience*, **2018**, 38, 9900-9924	6.6	0
3	Attractor dynamics in an electronic neural network. *Lecture Notes in Computer Science*, **1997**, 1265-1270	0.9	

2	Learning attractors in an asynchronous, stochastic electronic neural network. *Network: Computation in Neural Systems*, **1998**, 9, 183-205	0.7
1	Encoding the Temporal Statistics of Markovian Sequences of Stimuli in Recurrent Neuronal Networks. *Lecture Notes in Computer Science*, **2002**, 204-209	0.9