Dean V Buonomano

List of Publications by Citations

71 papers	7,080 citations	36 h-index	81 g-index
81 ext. papers	8,230 ext. citations	7.6 avg, IF	6.44 L-index

#	Paper	IF	Citations
71	Cortical plasticity: from synapses to maps. *Annual Review of Neuroscience*, **1998**, 21, 149-86	17	1644
70	The neural basis of temporal processing. *Annual Review of Neuroscience*, **2004**, 27, 307-40	17	633
69	State-dependent computations: spatiotemporal processing in cortical networks. *Nature Reviews Neuroscience*, **2009**, 10, 113-25	13.5	605
68	Timing in the absence of clocks: encoding time in neural network states. *Neuron*, **2007**, 53, 427-38	13.9	416
67	Temporal information transformed into a spatial code by a neural network with realistic properties. *Science*, **1995**, 267, 1028-30	33.3	333
66	Robust timing and motor patterns by taming chaos in recurrent neural networks. *Nature Neuroscience*, **2013**, 16, 925-33	25.5	278
65	Neural Network Model of the Cerebellum: Temporal Discrimination and the Timing of Motor Responses. *Neural Computation*, **1994**, 6, 38-55	2.9	269
64	Decoding temporal information: A model based on short-term synaptic plasticity. *Journal of Neuroscience*, **2000**, 20, 1129-41	6.6	246
63	Learning and generalization of auditory temporal-interval discrimination in humans. *Journal of Neuroscience*, **1997**, 17, 3956-63	6.6	227
62	How do we tell time?. *Neuroscientist*, **2002**, 8, 42-51	7.6	142
61	The Neural Basis of Timing: Distributed Mechanisms for Diverse Functions. *Neuron*, **2018**, 98, 687-705	13.9	135
60	Time and the brain: how subjective time relates to neural time. *Journal of Neuroscience*, **2005**, 25, 10369-71	6.6	127
59	A model of spike-timing dependent plasticity: one or two coincidence detectors?. *Journal of Neurophysiology*, **2002**, 88, 507-13	3.2	123
58	Distortions of subjective time perception within and across senses. *PLoS ONE*, **2008**, 3, e1437	3.7	119
57	Population clocks: motor timing with neural dynamics. *Trends in Cognitive Sciences*, **2010**, 14, 520-7	14	114
56	Temporal specificity of perceptual learning in an auditory discrimination task. *Learning and Memory*, **2003**, 10, 141-7	2.8	92
55	The biology of time across different scales. *Nature Chemical Biology*, **2007**, 3, 594-7	11.7	82

54	Different forms of homeostatic plasticity are engaged with distinct temporal profiles. *European Journal of Neuroscience*, **2006**, 23, 1575-84	3.5	78
53	Neural and molecular bases of nonassociative and associative learning in Aplysia. *Annals of the New York Academy of Sciences*, **1991**, 627, 124-49	6.5	77
52	Differential Encoding of Time by Prefrontal and Striatal Network Dynamics. *Journal of Neuroscience* , **2017**, 37, 854-870	6.6	75
51	Timing of neural responses in cortical organotypic slices. *Proceedings of the National Academy of Sciences of the United States of America*, **2003**, 100, 4897-902	11.5	73
50	Differential effects of excitatory and inhibitory plasticity on synaptically driven neuronal input-output functions. *Neuron*, **2009**, 61, 774-85	13.9	72
49	Embedding multiple trajectories in simulated recurrent neural networks in a self-organizing manner. *Journal of Neuroscience*, **2009**, 29, 13172-81	6.6	71
48	Net interaction between different forms of short-term synaptic plasticity and slow-IPSPs in the hippocampus and auditory cortex. *Journal of Neurophysiology*, **1998**, 80, 1765-74	3.2	69
47	Neural dynamics of in vitro cortical networks reflects experienced temporal patterns. *Nature Neuroscience*, **2010**, 13, 917-9	25.5	67
46	Influence of the interstimulus interval on temporal processing and learning: testing the state-dependent network model. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2009**, 364, 1865-73	5.8	63
45	A learning rule for the emergence of stable dynamics and timing in recurrent networks. *Journal of Neurophysiology*, **2005**, 94, 2275-83	3.2	63
44	Timing as an intrinsic property of neural networks: evidence from in vivo and in vitro experiments. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2014**, 369, 20120460	5.8	62
43	Development and plasticity of spontaneous activity and Up states in cortical organotypic slices. *Journal of Neuroscience*, **2007**, 27, 5915-25	6.6	58
42	Time in Cortical Circuits. *Journal of Neuroscience*, **2015**, 35, 13912-6	6.6	50
41	Mechanisms and significance of spike-timing dependent plasticity. *Biological Cybernetics*, **2002**, 87, 373-82	2.8	49
40	Distinct functional types of associative long-term potentiation in neocortical and hippocampal pyramidal neurons. *Journal of Neuroscience*, **1999**, 19, 6748-54	6.6	47
39	Timing and balance of inhibition enhance the effect of long-term potentiation on cell firing. *Journal of Neuroscience*, **2004**, 24, 8873-84	6.6	46
38	Encoding sensory and motor patterns as time-invariant trajectories in recurrent neural networks. *ELife*, **2018**, 7,	8.9	42
37	Differential effects of short- and long-term potentiation on cell firing in the CA1 region of the hippocampus. *Journal of Neuroscience*, **2003**, 23, 112-21	6.6	40

36	A neural network model of temporal code generation and position-invariant pattern recognition. *Neural Computation*, **1999**, 11, 103-16	2.9	36
35	Neurocomputational Models of Interval and Pattern Timing. *Current Opinion in Behavioral Sciences*, **2016**, 8, 250-257	4	34
34	A novel learning rule for long-term plasticity of short-term synaptic plasticity enhances temporal processing. *Frontiers in Integrative Neuroscience*, **2011**, 5, 20	3.2	23
33	Learning of temporal motor patterns: an analysis of continuous versus reset timing. *Frontiers in Integrative Neuroscience*, **2011**, 5, 61	3.2	23
32	A model of temporal scaling correctly predicts that motor timing improves with speed. *Nature Communications*, **2018**, 9, 4732	17.4	23
31	Temporal Interval Learning in Cortical Cultures Is Encoded in Intrinsic Network Dynamics. *Neuron*, **2016**, 91, 320-7	13.9	22
30	Temporal Perceptual Learning. *Timing and Time Perception*, **2014**, 2, 261-289	0.7	20
29	Inhibitory neuron produces heterosynaptic inhibition of the sensory-to-motor neuron synapse in Aplysia. *Brain Research*, **1992**, 577, 147-50	3.7	20
28	Encoding Time in Feedforward Trajectories of a Recurrent Neural Network Model. *Neural Computation*, **2018**, 30, 378-396	2.9	20
27	A model of order-selectivity based on dynamic changes in the balance of excitation and inhibition produced by short-term synaptic plasticity. *Journal of Neurophysiology*, **2015**, 113, 509-23	3.2	17
26	Short-Term Synaptic Plasticity as a Mechanism for Sensory Timing. *Trends in Neurosciences*, **2018**, 41, 701-711	13.3	17
25	Neural Sequences as an Optimal Dynamical Regime for the Readout of Time. *Neuron*, **2020**, 108, 651-658.e5	13.9	15
24	Unsupervised formation of vocalization-sensitive neurons: a cortical model based on short-term and homeostatic plasticity. *Neural Computation*, **2012**, 24, 2579-603	2.9	14
23	A technique for repeated recordings in cortical organotypic slices. *Journal of Neuroscience Methods*, **2005**, 146, 69-75	3	14
22	Neural dynamics based timing in the subsecond to seconds range. *Advances in Experimental Medicine and Biology*, **2014**, 829, 101-17	3.6	14
21	Harnessing chaos in recurrent neural networks. *Neuron*, **2009**, 63, 423-5	13.9	13
20	Chronic electrical stimulation homeostatically decreases spontaneous activity, but paradoxically increases evoked network activity. *Journal of Neurophysiology*, **2013**, 109, 1824-36	3.2	11
19	Delayed in vitro development of Up states but normal network plasticity in Fragile X circuits. *European Journal of Neuroscience*, **2015**, 42, 2312-21	3.5	9

18	A method for chronic stimulation of cortical organotypic cultures using implanted electrodes. *Journal of Neuroscience Methods*, **2009**, 176, 136-43	3	8
17	Developmental shift of short-term synaptic plasticity in cortical organotypic slices. *Neuroscience*, **2012**, 213, 38-46	3.9	6
16	Multifocal fluorescence microscope for fast optical recordings of neuronal action potentials. *Biophysical Journal*, **2015**, 108, 520-9	2.9	4
15	Population Clocks: Motor Timing with Neural Dynamics **2011**, 71-85		4
14	Differential Encoding of Time by Prefrontal and Striatal Network Dynamics. *Journal of Neuroscience* , **2017**, 37, 854-870	6.6	3
13	Differential Short-Term Plasticity of PV and SST Neurons Accounts for Adaptation and Facilitation of Cortical Neurons to Auditory Tones. *Journal of Neuroscience*, **2020**, 40, 9224-9235	6.6	3
12	Decreased reproducibility and abnormal experience-dependent plasticity of network dynamics in Fragile X circuits. *Scientific Reports*, **2020**, 10, 14535	4.9	3
11	Neural coding: time contraction and dilation in the striatum. *Current Biology*, **2015**, 25, R374-6	6.3	2
10	Musical expertise generalizes to superior temporal scaling in a Morse code tapping task. *PLoS ONE*, **2020**, 15, e0221000	3.7	2
9	Author response: Encoding sensory and motor patterns as time-invariant trajectories in recurrent neural networks **2018**,		2
8	Utilizing the Cortico-Striatal Projectome to Advance the Study of Timing and Time Perception. *Timing and Time Perception*, **2016**, 4, 411-422	0.7	1
7	Differential Excitability of PV and SST Neurons Results in Distinct Functional Roles in Inhibition Stabilization of Up States. *Journal of Neuroscience*, **2021**, 41, 7182-7196	6.6	1
6	The orbitofrontal cortex in temporal cognition. *Behavioral Neuroscience*, **2021**, 135, 154-164	2.1	0
5	Encoding time in neural dynamic regimes with distinct computational tradeoffs.. *PLoS Computational Biology*, **2022**, 18, e1009271	5	0
4	Musical expertise generalizes to superior temporal scaling in a Morse code tapping task **2020**, 15, e0221000		
3	Musical expertise generalizes to superior temporal scaling in a Morse code tapping task **2020**, 15, e0221000		
2	Musical expertise generalizes to superior temporal scaling in a Morse code tapping task **2020**, 15, e0221000		
1	Musical expertise generalizes to superior temporal scaling in a Morse code tapping task **2020**, 15, e0221000		