Harel Z Shouval

List of Publications by Year
in descending order

41 papers	2,304 citations	394421 19 h-index	345221 36 g-index
50 all docs	50 docs citations	50 times ranked	2130 citing authors

#	Article	IF	Citations
1	A unified model of NMDA receptor-dependent bidirectional synaptic plasticity. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 10831-10836.	7.1	576
2	Visual Experience and Deprivation Bidirectionally Modify the Composition and Function of NMDA Receptors in Visual Cortex. Neuron, 2001, 29, 157-169.	8.1	360
3	Distinct Eligibility Traces for LTP and LTD in Cortical Synapses. Neuron, 2015, 88, 528-538.	8.1	149
4	Compensation for PKMÎ¶ in long-term potentiation and spatial long-term memory in mutant mice. ELife, 2016, 5, .	6.0	138
5	Spike timing dependent plasticity: a consequence of more fundamental learning rules. Frontiers in Computational Neuroscience, 2010, 4, .	2.1	95
6	Synaptic homeostasis and input selectivity follow from a calcium-dependent plasticity model. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 14943-14948.	7.1	89
7	Learning reward timing in cortex through reward dependent expression of synaptic plasticity. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 6826-6831.	7.1	70
8	Stochastic Properties of Synaptic Transmission Affect the Shape of Spike Timeâ€"Dependent Plasticity Curves. Journal of Neurophysiology, 2005, 93, 1069-1073.	1.8	69
9	Converging evidence for a simplified biophysical model of synaptic plasticity. Biological Cybernetics, 2002, 87, 383-391.	1.3	68
10	Visually Cued Action Timing in the Primary Visual Cortex. Neuron, 2015, 86, 319-330.	8.1	66
11	Clusters of interacting receptors can stabilize synaptic efficacies. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 14440-14445.	7.1	60
12	Persistent increased PKMÎ¶ in long-term and remote spatial memory. Neurobiology of Learning and Memory, 2017, 138, 135-144.	1.9	56
13	Matching biochemical and functional efficacies confirm ZIP as a potent competitive inhibitor of PKMÎ¶ in neurons. Neuropharmacology, 2013, 64, 37-44.	4.1	50
14	Atypical PKCs in memory maintenance: the roles of feedback and redundancy. Learning and Memory, 2015, 22, 344-353.	1.3	42
15	Translational switch for longâ€term maintenance of synaptic plasticity. Molecular Systems Biology, 2009, 5, 284.	7.2	38
16	A network of spiking neurons that can represent interval timing: mean field analysis. Journal of Computational Neuroscience, 2011, 30, 501-513.	1.0	31
17	Effect of Stochastic Synaptic and Dendritic Dynamics on Synaptic Plasticity in Visual Cortex and Hippocampus. Journal of Neurophysiology, 2007, 97, 375-386.	1.8	30
18	Structural Plasticity Can Produce Metaplasticity. PLoS ONE, 2009, 4, e8062.	2.5	27

#	Article	IF	Citations
19	Networks that learn the precise timing of event sequences. Journal of Computational Neuroscience, 2015, 39, 235-254.	1.0	26
20	Network dynamics of Brocaâ€™s area during word selection. PLoS ONE, 2019, 14, e0225756.	2.5	25
21	A Simple Network Architecture Accounts for Diverse Reward Time Responses in Primary Visual Cortex. Journal of Neuroscience, 2015, 35, 12659-12672.	3.6	23
22	On the precision of quasi steady state assumptions in stochastic dynamics. Journal of Chemical Physics, 2012, 137, 044105.	3.0	22
23	A Biophysical Basis for the Inter-spike Interaction of Spike-timing-dependent Plasticity. Biological Cybernetics, 2006, 95, 113-121.	1.3	17
24	Learning precise spatiotemporal sequences via biophysically realistic learning rules in a modular, spiking network. ELife, 2021, 10, .	6.0	17
25	The Role of Multiple Neuromodulators in Reinforcement Learning That Is Based on Competition between Eligibility Traces. Frontiers in Synaptic Neuroscience, 2016, 8, 37.	2.5	14
26	A Biophysical Model of Synaptic Plasticity and Metaplasticity Can Account for the Dynamics of the Backward Shift of Hippocampal Place Fields. Journal of Neurophysiology, 2008, 100, 983-992.	1.8	13
27	A single spiking neuron that can represent interval timing: analysis, plasticity and multi-stability. Journal of Computational Neuroscience, 2011, 30, 489-499.	1.0	12
28	Analysis of the intraspinal calcium dynamics and its implications for the plasticity of spiking neurons. Physical Review E, 2004, 69, 011907.	2.1	10
29	Simulating place field dynamics using spike timing-dependent plasticity. Neurocomputing, 2006, 69, 1253-1259.	5.9	9
30	Behavioral Time Scale Plasticity of Place Fields: Mathematical Analysis. Frontiers in Computational Neuroscience, 2021, 15, 640235.	2.1	9
31	What is the appropriate description level for synaptic plasticity?. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 19103-19104.	7.1	7
32	Scaling of Perceptual Errors Can Predict the Shape of Neural Tuning Curves. Physical Review Letters, 2013, 110, 168102.	7.8	4
33	What does scalar timing tell us about neural dynamics?. Frontiers in Human Neuroscience, 2014, 8, 438.	2.0	4
34	Evaluating statistical methods used to estimate the number of postsynaptic receptors. Journal of Neuroscience Methods, 2009, 178, 393-401.	2.5	3
35	Conditions for Synaptic Specificity during the Maintenance Phase of Synaptic Plasticity. ENeuro, 2022, 9, ENEURO.0064-22.2022.	1.9	2
36	Plasticity of network dynamics as observed experimentally requires heterogeneity of the network connectivity pattern. BMC Neuroscience, 2013, 14, .	1.9	1

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37	Spatiotemporal dynamics of calcium and calmodulin at the spine. BMC Neuroscience, 2007, 8, .	1.9	0
38	Spatiotemporal molecular dynamics and synaptic plasticity. BMC Neuroscience, 2008, 9, .	1.9	0
39	Modeling stochastic calcium dynamics in the dendritic spines: a hybrid algorithm. BMC Neuroscience, 2008, 9, P86.	1.9	0
40	On the origin of sensory errors: Contrast discrimination under temporal constraint. Journal of Vision, 2017, 17, 6.	0.3	0
41	Active intrinsic conductances in recurrent networks allow for long-lasting transients and sustained activity with realistic firing rates as well as robust plasticity. Journal of Computational Neuroscience, 2021, , 1.	1.0	0