

Misha Tsodyks

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/5105932/publications.pdf>

Version: 2024-02-01

72
papers

7,253
citations

126907

33
h-index

85541

71
g-index

81
all docs

81
docs citations

81
times ranked

5300
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | Synaptic Theory of Working Memory. <i>Science</i> , 2008, 319, 1543-1546. | 12.6 | 1,019 |
| 2 | Spontaneously emerging cortical representations of visual attributes. <i>Nature</i> , 2003, 425, 954-956. | 27.8 | 851 |
| 3 | Neural Networks with Dynamic Synapses. <i>Neural Computation</i> , 1998, 10, 821-835. | 2.2 | 814 |
| 4 | Redistribution of synaptic efficacy between neocortical pyramidal neurons. <i>Nature</i> , 1996, 382, 807-810. | 27.8 | 747 |
| 5 | Coding of Temporal Information by Activity-Dependent Synapses. <i>Journal of Neurophysiology</i> , 2002, 87, 140-148. | 1.8 | 241 |
| 6 | Working models of working memory. <i>Current Opinion in Neurobiology</i> , 2014, 25, 20-24. | 4.2 | 199 |
| 7 | The Emergence of Up and Down States in Cortical Networks. <i>PLoS Computational Biology</i> , 2006, 2, e23. | 3.2 | 197 |
| 8 | An Algorithm for Modifying Neurotransmitter Release Probability Based on Pre- and Postsynaptic Spike Timing. <i>Neural Computation</i> , 2001, 13, 35-67. | 2.2 | 180 |
| 9 | A unifying principle underlying the extracellular field potential spectral responses in the human cortex. <i>Journal of Neurophysiology</i> , 2015, 114, 505-519. | 1.8 | 171 |
| 10 | Neuronal Population Coding of Parametric Working Memory. <i>Journal of Neuroscience</i> , 2010, 30, 9424-9430. | 3.6 | 167 |
| 11 | From fixed points to chaos: Three models of delayed discrimination. <i>Progress in Neurobiology</i> , 2013, 103, 214-222. | 5.7 | 151 |
| 12 | Context-enabled learning in the human visual system. <i>Nature</i> , 2002, 415, 790-793. | 27.8 | 145 |
| 13 | Neural networks and perceptual learning. <i>Nature</i> , 2004, 431, 775-781. | 27.8 | 142 |
| 14 | Spike Frequency Adaptation and Neocortical Rhythms. <i>Journal of Neurophysiology</i> , 2002, 88, 761-770. | 1.8 | 134 |
| 15 | Information Processing with Frequency-Dependent Synaptic Connections. <i>Neurobiology of Learning and Memory</i> , 1998, 70, 101-112. | 1.9 | 129 |
| 16 | Attractor neural network models of spatial maps in hippocampus. <i>Hippocampus</i> , 1999, 9, 481-489. | 1.9 | 120 |
| 17 | Potential for multiple mechanisms, phenomena and algorithms for synaptic plasticity at single synapses. <i>Neuropharmacology</i> , 1998, 37, 489-500. | 4.1 | 118 |
| 18 | Persistent Activity in Neural Networks with Dynamic Synapses. <i>PLoS Computational Biology</i> , 2007, 3, e35. | 3.2 | 105 |

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 19 | A theory of working memory without consciousness or sustained activity. <i>ELife</i> , 2017, 6, . | 6.0 | 100 |
| 20 | Short-Term Facilitation may Stabilize Parametric Working Memory Trace. <i>Frontiers in Computational Neuroscience</i> , 2011, 5, 40. | 2.1 | 94 |
| 21 | Synaptic Correlates of Working Memory Capacity. <i>Neuron</i> , 2017, 93, 323-330. | 8.1 | 91 |
| 22 | Computation by ensemble synchronization in recurrent networks with synaptic depression. <i>Journal of Computational Neuroscience</i> , 2002, 13, 111-124. | 1.0 | 83 |
| 23 | Perceptual learning in contrast discrimination: The effect of contrast uncertainty. <i>Journal of Vision</i> , 2004, 4, 2. | 0.3 | 80 |
| 24 | Dynamics of Memory Representations in Networks with Novelty-Facilitated Synaptic Plasticity. <i>Neuron</i> , 2006, 52, 383-394. | 8.1 | 72 |
| 25 | Short-term plasticity based network model of place cells dynamics. <i>Hippocampus</i> , 2015, 25, 94-105. | 1.9 | 69 |
| 26 | Neural network model of the primary visual cortex: From functional architecture to lateral connectivity and back. <i>Journal of Computational Neuroscience</i> , 2006, 20, 219-241. | 1.0 | 58 |
| 27 | Multiple mechanisms govern the dynamics of depression at neocortical synapses of young rats. <i>Journal of Physiology</i> , 2004, 557, 415-438. | 2.9 | 55 |
| 28 | Coding and learning of behavioral sequences. <i>Trends in Neurosciences</i> , 2004, 27, 11-14. | 8.6 | 55 |
| 29 | Multiquantal release underlies the distribution of synaptic efficacies in the neocortex. <i>Frontiers in Computational Neuroscience</i> , 2009, 3, 27. | 2.1 | 50 |
| 30 | Multiscale representation of very large environments in the hippocampus of flying bats. <i>Science</i> , 2021, 372, . | 12.6 | 50 |
| 31 | Processing of sounds by population spikes in a model of primary auditory cortex. <i>Frontiers in Neuroscience</i> , 2007, 1, 197-209. | 2.8 | 49 |
| 32 | Slow oscillations in neural networks with facilitating synapses. <i>Journal of Computational Neuroscience</i> , 2008, 25, 308-316. | 1.0 | 46 |
| 33 | Scaling Laws of Associative Memory Retrieval. <i>Neural Computation</i> , 2013, 25, 2523-2544. | 2.2 | 44 |
| 34 | Synaptic Scaling Enables Dynamically Distinct Short- and Long-Term Memory Formation. <i>PLoS Computational Biology</i> , 2013, 9, e1003307. | 3.2 | 43 |
| 35 | Spike-timing-dependent synaptic plasticity – the long road towards understanding neuronal mechanisms of learning and memory. <i>Trends in Neurosciences</i> , 2002, 25, 599-600. | 8.6 | 36 |
| 36 | Continuous Attractors with Morphed/Correlated Maps. <i>PLoS Computational Biology</i> , 2010, 6, e1000869. | 3.2 | 35 |

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 37 | Chaos in neural networks with dynamic synapses. <i>Neurocomputing</i> , 2000, 32-33, 365-370. | 5.9 | 34 |
| 38 | Neural Network Model of Memory Retrieval. <i>Frontiers in Computational Neuroscience</i> , 2015, 9, 149. | 2.1 | 33 |
| 39 | Visual perception as retrospective Bayesian decoding from high- to low-level features. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E9115-E9124. | 7.1 | 30 |
| 40 | Memory Retrieval from First Principles. <i>Neuron</i> , 2017, 94, 1027-1032. | 8.1 | 27 |
| 41 | Continuous Attractor Network Model for Conjunctive Position-by-Velocity Tuning of Grid Cells. <i>PLoS Computational Biology</i> , 2014, 10, e1003558. | 3.2 | 23 |
| 42 | Optimal dynamic coding by mixed-dimensionality neurons in the head-direction system of bats. <i>Nature Communications</i> , 2018, 9, 3590. | 12.8 | 23 |
| 43 | Singularities in the inverse modeling of 2AFC contrast discrimination data. <i>Vision Research</i> , 2006, 46, 259-266. | 1.4 | 22 |
| 44 | Recognition by Variance: Learning Rules for Spatiotemporal Patterns. <i>Neural Computation</i> , 2006, 18, 2343-2358. | 2.2 | 22 |
| 45 | Fundamental Law of Memory Recall. <i>Physical Review Letters</i> , 2020, 124, 018101. | 7.8 | 22 |
| 46 | Analysis of a two-alternative force-choice signal detection theory model. <i>Journal of Mathematical Psychology</i> , 2006, 50, 411-420. | 1.8 | 20 |
| 47 | Attractor Neural Networks and Spatial Maps in Hippocampus. <i>Neuron</i> , 2005, 48, 168-169. | 8.1 | 19 |
| 48 | The effects of perceptual history on memory of visual objects. <i>Vision Research</i> , 2007, 47, 965-973. | 1.4 | 18 |
| 49 | Mapping dynamic memories of gradually changing objects. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 5371-5376. | 7.1 | 18 |
| 50 | Associative learning in early vision. <i>Neural Networks</i> , 2004, 17, 823-832. | 5.9 | 17 |
| 51 | Theta-paced flickering between place cell maps in the hippocampus: A model based on short-term synaptic plasticity. <i>Hippocampus</i> , 2017, 27, 959-970. | 1.9 | 17 |
| 52 | Neural information processing with dynamical synapses. <i>Frontiers in Computational Neuroscience</i> , 2013, 7, 188. | 2.1 | 16 |
| 53 | Relation Between Retinotopical and Orientation Maps in Visual Cortex. <i>Neural Computation</i> , 1999, 11, 375-379. | 2.2 | 15 |
| 54 | Population spikes in cortical networks during different functional states. <i>Frontiers in Computational Neuroscience</i> , 2012, 6, 43. | 2.1 | 14 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 55 | Word length effect in free recall of randomly assembled word lists. <i>Frontiers in Computational Neuroscience</i> , 2014, 8, 129. | 2.1 | 14 |
| 56 | Effects of long-term representations on free recall of unrelated words. <i>Learning and Memory</i> , 2015, 22, 101-108. | 1.3 | 14 |
| 57 | Practice makes perfect in memory recall. <i>Learning and Memory</i> , 2016, 23, 169-173. | 1.3 | 11 |
| 58 | Memory States and Transitions between Them in Attractor Neural Networks. <i>Neural Computation</i> , 2017, 29, 2684-2711. | 2.2 | 11 |
| 59 | Inverse modeling of human contrast response. <i>Vision Research</i> , 2007, 47, 2855-2867. | 1.4 | 9 |
| 60 | Retroactive interference model of forgetting. <i>Journal of Mathematical Neuroscience</i> , 2021, 11, 4. | 2.4 | 9 |
| 61 | Emergence of hierarchical organization in memory for random material. <i>Scientific Reports</i> , 2019, 9, 10448. | 3.3 | 8 |
| 62 | Singularities explained: Response to Klein. <i>Vision Research</i> , 2007, 47, 2918-2922. | 1.4 | 5 |
| 63 | Intracellular Dynamics of Virtual Place Cells. <i>Neural Computation</i> , 2011, 23, 651-655. | 2.2 | 4 |
| 64 | Biases and Variability from Costly Bayesian Inference. <i>Entropy</i> , 2021, 23, 603. | 2.2 | 4 |
| 65 | Analysis and modeling of population dynamics in the visual cortex. <i>Neurocomputing</i> , 1999, 26-27, 361-366. | 5.9 | 2 |
| 66 | Stabilizing patterns in time: Neural network approach. <i>PLoS Computational Biology</i> , 2017, 13, e1005861. | 3.2 | 2 |
| 67 | Effects of order on memory of event times. <i>Scientific Reports</i> , 2021, 11, 17456. | 3.3 | 2 |
| 68 | Activity of coupled excitatory and inhibitory neural populations with dynamic synapses. <i>Neurocomputing</i> , 2000, 32-33, 359-364. | 5.9 | 1 |
| 69 | Feature Detection in Visual Cortex during Different Functional States. <i>Frontiers in Computational Neuroscience</i> , 2017, 11, 21. | 2.1 | 1 |
| 70 | Spontaneous pattern generation by a network with dynamic synapses. <i>BMC Neuroscience</i> , 2007, 8, . | 1.9 | 0 |
| 71 | Associative Learning in Early Vision. , 2012, , 334-338. | | 0 |
| 72 | Cross-fixation interactions of orientations suggest high-to-low-level decoding in visual working memory. <i>Vision Research</i> , 2022, 190, 107963. | 1.4 | 0 |