

# Surya Ganguli

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/6828708/publications.pdf>

Version: 2024-02-01

56  
papers

5,543  
citations

136950

32  
h-index

175258

52  
g-index

78  
all docs

78  
docs citations

78  
times ranked

5546  
citing authors

#	ARTICLE	IF	CITATIONS
1	Emergent reliability in sensory cortical coding and inter-area communication. <i>Nature</i> , 2022, 605, 713-721.	27.8	31
2	GluD2- and Cbln1-mediated competitive interactions shape the dendritic arbors of cerebellar Purkinje cells. <i>Neuron</i> , 2021, 109, 629-644.e8.	8.1	32
3	Coupling of activity, metabolism and behaviour across the <i>Drosophila</i> brain. <i>Nature</i> , 2021, 593, 244-248.	27.8	59
4	Enhancing Associative Memory Recall and Storage Capacity Using Confocal Cavity QED. <i>Physical Review X</i> , 2021, 11, .	8.9	25
5	A neural circuit state change underlying skilled movements. <i>Cell</i> , 2021, 184, 3731-3747.e21.	28.9	45
6	Distance-tuned neurons drive specialized path integration calculations in medial entorhinal cortex. <i>Cell Reports</i> , 2021, 36, 109669.	6.4	40
7	Embodied intelligence via learning and evolution. <i>Nature Communications</i> , 2021, 12, 5721.	12.8	62
8	Distinct inÂvivo dynamics of excitatory synapses onto cortical pyramidal neurons and parvalbumin-positive interneurons. <i>Cell Reports</i> , 2021, 37, 109972.	6.4	9
9	Statistical Mechanics of Deep Learning. <i>Annual Review of Condensed Matter Physics</i> , 2020, 11, 501-528.	14.5	117
10	Discovering Precise Temporal Patterns in Large-Scale Neural Recordings through Robust and Interpretable Time Warping. <i>Neuron</i> , 2020, 105, 246-259.e8.	8.1	63
11	Coherent Ising machinesâ€”Quantum optics and neural network Perspectives. <i>Applied Physics Letters</i> , 2020, 117, .	3.3	26
12	Fundamental bounds on the fidelity of sensory cortical coding. <i>Nature</i> , 2020, 580, 100-105.	27.8	146
13	Cortical layerâ€”specific critical dynamics triggering perception. <i>Science</i> , 2019, 365, .	12.6	447
14	A deep learning framework for neuroscience. <i>Nature Neuroscience</i> , 2019, 22, 1761-1770.	14.8	563
15	Accurate Estimation of Neural Population Dynamics without Spike Sorting. <i>Neuron</i> , 2019, 103, 292-308.e4.	8.1	195
16	A mathematical theory of semantic development in deep neural networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 11537-11546.	7.1	90
17	Shared Cortex-Cerebellum Dynamics in the Execution and Learning of a Motor Task. <i>Cell</i> , 2019, 177, 669-682.e24.	28.9	130
18	Statistical mechanics of low-rank tensor decomposition. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2019, 2019, 124016.	2.3	4

#	ARTICLE	IF	CITATIONS
19	Universality and individuality in neural dynamics across large populations of recurrent networks. <i>Advances in Neural Information Processing Systems</i> , 2019, 2019, 15629-15641.	2.8	10
20	From deep learning to mechanistic understanding in neuroscience: the structure of retinal prediction.. <i>Advances in Neural Information Processing Systems</i> , 2019, 32, 8537-8547.	2.8	1
21	SuperSpike: Supervised Learning in Multilayer Spiking Neural Networks. <i>Neural Computation</i> , 2018, 30, 1514-1541.	2.2	307
22	Emergent elasticity in the neural code for space. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, E11798-E11806.	7.1	66
23	Principles governing the integration of landmark and self-motion cues in entorhinal cortical codes for navigation. <i>Nature Neuroscience</i> , 2018, 21, 1096-1106.	14.8	143
24	Inferring hidden structure in multilayered neural circuits. <i>PLoS Computational Biology</i> , 2018, 14, e1006291.	3.2	56
25	Unsupervised Discovery of Demixed, Low-Dimensional Neural Dynamics across Multiple Timescales through Tensor Component Analysis. <i>Neuron</i> , 2018, 98, 1099-1115.e8.	8.1	193
26	Convolutional recurrent neural network models of dynamics in higher visual cortex. <i>Journal of Vision</i> , 2018, 18, 717.	0.3	2
27	The temporal paradox of Hebbian learning and homeostatic plasticity. <i>Current Opinion in Neurobiology</i> , 2017, 43, 166-176.	4.2	138
28	A Multiplexed, Heterogeneous, and Adaptive Code for Navigation in Medial Entorhinal Cortex. <i>Neuron</i> , 2017, 94, 375-387.e7.	8.1	233
29	Cell types for our sense of location: where we are and where we are going. <i>Nature Neuroscience</i> , 2017, 20, 1474-1482.	14.8	43
30	Social Control of Hypothalamus-Mediated Male Aggression. <i>Neuron</i> , 2017, 95, 955-970.e4.	8.1	117
31	An International Laboratory for Systems and Computational Neuroscience. <i>Neuron</i> , 2017, 96, 1213-1218.	8.1	60
32	Pyret: A Python package for analysis of neurophysiology data. <i>Journal of Open Source Software</i> , 2017, 2, 137.	4.6	3
33	A saturation hypothesis to explain both enhanced and impaired learning with enhanced plasticity. <i>ELife</i> , 2017, 6, .	6.0	15
34	Statistical Mechanics of Optimal Convex Inference in High Dimensions. <i>Physical Review X</i> , 2016, 6, .	8.9	19
35	Direction Selectivity in <i>Drosophila</i> Emerges from Preferred-Direction Enhancement and Null-Direction Suppression. <i>Journal of Neuroscience</i> , 2016, 36, 8078-8092.	3.6	76
36	Deep Learning Models of the Retinal Response to Natural Scenes. <i>Advances in Neural Information Processing Systems</i> , 2016, 29, 1369-1377.	2.8	60

#	ARTICLE	IF	CITATIONS
37	Role of the site of synaptic competition and the balance of learning forces for Hebbian encoding of probabilistic Markov sequences. <i>Frontiers in Computational Neuroscience</i> , 2015, 9, 92.	2.1	4
38	On simplicity and complexity in the brave new world of large-scale neuroscience. <i>Current Opinion in Neurobiology</i> , 2015, 32, 148-155.	4.2	320
39	Environmental Boundaries as an Error Correction Mechanism for Grid Cells. <i>Neuron</i> , 2015, 86, 827-839.	8.1	211
40	Evidence for a causal inverse model in an avian cortico-basal ganglia circuit. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 6063-6068.	7.1	42
41	Statistical mechanics of complex neural systems and high dimensional data. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2013, 2013, P03014.	2.3	36
42	Investigating the role of firing-rate normalization and dimensionality reduction in brain-machine interface robustness. , 2013, 2013, 293-8.		11
43	A Hebbian learning rule gives rise to mirror neurons and links them to control theoretic inverse models. <i>Frontiers in Neural Circuits</i> , 2013, 7, 106.	2.8	40
44	Spatial Information Outflow from the Hippocampal Circuit: Distributed Spatial Coding and Phase Precession in the Subiculum. <i>Journal of Neuroscience</i> , 2012, 32, 11539-11558.	3.6	90
45	Compressed Sensing, Sparsity, and Dimensionality in Neuronal Information Processing and Data Analysis. <i>Annual Review of Neuroscience</i> , 2012, 35, 485-508.	10.7	201
46	Statistical Mechanics of Compressed Sensing. <i>Physical Review Letters</i> , 2010, 104, 188701.	7.8	53
47	Feedforward to the Past: The Relation between Neuronal Connectivity, Amplification, and Short-Term Memory. <i>Neuron</i> , 2009, 61, 499-501.	8.1	15
48	One-Dimensional Dynamics of Attention and Decision Making in LIP. <i>Neuron</i> , 2008, 58, 15-25.	8.1	126
49	Memory traces in dynamical systems. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, 18970-18975.	7.1	217
50	Function constrains network architecture and dynamics: A case study on the yeast cell cycle Boolean network. <i>Physical Review E</i> , 2007, 75, 051907.	2.1	81
51	E10orbifolds. <i>Journal of High Energy Physics</i> , 2005, 2005, 057-057.	4.7	9
52	Twisted Six Dimensional Gauge Theories on Tori, Matrix Models, and Integrable Systems. <i>Journal of High Energy Physics</i> , 2004, 2004, 014-014.	4.7	3
53	Holographic protection of chronology in universes of the GÃ¶del type. <i>Physical Review D</i> , 2003, 67, .	4.7	114
54	Distinct &lt;i>in vivo</i> Dynamics of Excitatory Synapses Onto Cortical Pyramidal Neurons and Inhibitory Interneurons. <i>SSRN Electronic Journal</i> , 0, , .	0.4	1

#	ARTICLE	IF	CITATIONS
55	Shared Cortex-Cerebellum Dynamics in the Execution and Learning of a Motor Task. SSRN Electronic Journal, 0, , .	0.4	1
56	GluD2- and Cbln1-Mediated Competitive Synaptogenesis Shapes the Dendritic Arbors of Cerebellar Purkinje Cells. SSRN Electronic Journal, 0, , .	0.4	0