

# Arvind Kumar

## List of Publications by Year in descending order

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Version: 2024-02-01

65  
papers

2,135  
citations

361045

20  
h-index

276539

41  
g-index

91  
all docs

91  
docs citations

91  
times ranked

2352  
citing authors

#	ARTICLE	IF	CITATIONS
1	Spiking activity propagation in neuronal networks: reconciling different perspectives on neural coding. <i>Nature Reviews Neuroscience</i> , 2010, 11, 615-627.	4.9	395
2	Conditions for Propagating Synchronous Spiking and Asynchronous Firing Rates in a Cortical Network Model. <i>Journal of Neuroscience</i> , 2008, 28, 5268-5280.	1.7	182
3	The High-Conductance State of Cortical Networks. <i>Neural Computation</i> , 2008, 20, 1-43.	1.3	180
4	Portraits of communication in neuronal networks. <i>Nature Reviews Neuroscience</i> , 2019, 20, 117-127.	4.9	126
5	The Role of Inhibition in Generating and Controlling Parkinson's Disease Oscillations in the Basal Ganglia. <i>Frontiers in Systems Neuroscience</i> , 2011, 5, 86.	1.2	116
6	Gating of Signal Propagation in Spiking Neural Networks by Balanced and Correlated Excitation and Inhibition. <i>Journal of Neuroscience</i> , 2010, 30, 15760-15768.	1.7	109
7	Spontaneous cortical activity is transiently poised close to criticality. <i>PLoS Computational Biology</i> , 2017, 13, e1005543.	1.5	88
8	Communication through Resonance in Spiking Neuronal Networks. <i>PLoS Computational Biology</i> , 2014, 10, e1003811.	1.5	78
9	Intraglomerular Lateral Inhibition Promotes Spike Timing Variability in Principal Neurons of the Olfactory Bulb. <i>Journal of Neuroscience</i> , 2015, 35, 4319-4331.	1.7	52
10	Context-Dependent Encoding of Fear and Extinction Memories in a Large-Scale Network Model of the Basal Amygdala. <i>PLoS Computational Biology</i> , 2011, 7, e1001104.	1.5	50
11	Physiology and Impact of Horizontal Connections in Rat Neocortex. <i>Cerebral Cortex</i> , 2015, 25, 3818-3835.	1.6	46
12	Frequency-Dependent Changes in NMDAR-Dependent Synaptic Plasticity. <i>Frontiers in Computational Neuroscience</i> , 2011, 5, 38.	1.2	43
13	Existence and Control of Go/No-Go Decision Transition Threshold in the Striatum. <i>PLoS Computational Biology</i> , 2015, 11, e1004233.	1.5	42
14	Challenges of understanding brain function by selective modulation of neuronal subpopulations. <i>Trends in Neurosciences</i> , 2013, 36, 579-586.	4.2	41
15	Sensorimotor Processing in the Basal Ganglia Leads to Transient Beta Oscillations during Behavior. <i>Journal of Neuroscience</i> , 2017, 37, 11220-11232.	1.7	40
16	Significance of Input Correlations in Striatal Function. <i>PLoS Computational Biology</i> , 2011, 7, e1002254.	1.5	34
17	Basal Ganglia Neuromodulation Over Multiple Temporal and Structural Scales—Simulations of Direct Pathway MSNs Investigate the Fast Onset of Dopaminergic Effects and Predict the Role of Kv4.2. <i>Frontiers in Neural Circuits</i> , 2018, 12, 3.	1.4	34
18	Altered theta coupling between medial entorhinal cortex and dentate gyrus in temporal lobe epilepsy. <i>Epilepsia</i> , 2012, 53, 1937-1947.	2.6	29

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19	Abundance Compensates Kinetics: Similar Effect of Dopamine Signals on D1 and D2 Receptor Populations. <i>Journal of Neuroscience</i> , 2020, 40, 2868-2881.	1.7	28
20	CA2 beyond social memory: Evidence for a fundamental role in hippocampal information processing. <i>Neuroscience and Biobehavioral Reviews</i> , 2021, 126, 398-412.	2.9	27
21	Differential Coding Strategies in Glutamatergic and GABAergic Neurons in the Medial Cerebellar Nucleus. <i>Journal of Neuroscience</i> , 2020, 40, 159-170.	1.7	26
22	Role of Input Correlations in Shaping the Variability and Noise Correlations of Evoked Activity in the Neocortex. <i>Journal of Neuroscience</i> , 2015, 35, 8611-8625.	1.7	25
23	Perturbing low dimensional activity manifolds in spiking neuronal networks. <i>PLoS Computational Biology</i> , 2019, 15, e1007074.	1.5	24
24	Beyond Statistical Significance: Implications of Network Structure on Neuronal Activity. <i>PLoS Computational Biology</i> , 2012, 8, e1002311.	1.5	23
25	Dynamical state of the network determines the efficacy of single neuron properties in shaping the network activity. <i>Scientific Reports</i> , 2016, 6, 26029.	1.6	22
26	Short-Term Plasticity Combines with Excitation-Inhibition Balance to Expand Cerebellar Purkinje Cell Dynamic Range. <i>Journal of Neuroscience</i> , 2018, 38, 5153-5167.	1.7	22
27	Effect of edge pruning on structural controllability and observability of complex networks. <i>Scientific Reports</i> , 2015, 5, 18145.	1.6	21
28	From space to time: Spatial inhomogeneities lead to the emergence of spatiotemporal sequences in spiking neuronal networks. <i>PLoS Computational Biology</i> , 2019, 15, e1007432.	1.5	20
29	Facilitating the propagation of spiking activity in feedforward networks by including feedback. <i>PLoS Computational Biology</i> , 2020, 16, e1008033.	1.5	18
30	Selective neuromodulation and mutual inhibition within the <sc>CA3</sc> system can prioritize sequences for replay. <i>Hippocampus</i> , 2020, 30, 1228-1238.	0.9	16
31	Uncoupling the roles of firing rates and spike bursts in shaping the STN-GPe beta band oscillations. <i>PLoS Computational Biology</i> , 2020, 16, e1007748.	1.5	16
32	Activity Dynamics and Signal Representation in a Striatal Network Model with Distance-Dependent Connectivity. <i>ENeuro</i> , 2017, 4, ENEURO.0348-16.2017.	0.9	15
33	Emergence of population synchrony in a layered network of the cat visual cortex. <i>Neurocomputing</i> , 2007, 70, 2069-2073.	3.5	14
34	Homologous Basal Ganglia Network Models in Physiological and Parkinsonian Conditions. <i>Frontiers in Computational Neuroscience</i> , 2017, 11, 79.	1.2	14
35	Direct pathway neurons in mouse dorsolateral striatum in vivo receive stronger synaptic input than indirect pathway neurons. <i>Journal of Neurophysiology</i> , 2019, 122, 2294-2303.	0.9	14
36	Bursts with High and Low Load of Epileptiform Spikes Show Context-Dependent Correlations in Epileptic Mice. <i>ENeuro</i> , 2019, 6, ENEURO.0299-18.2019.	0.9	13

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37	Short-Term Synaptic Plasticity Makes Neurons Sensitive to the Distribution of Presynaptic Population Firing Rates. <i>ENeuro</i> , 2021, 8, ENEURO.0297-20.2021.	0.9	12
38	Impact of correlated inputs to neurons: modeling observations from in vivo intracellular recordings. <i>Journal of Computational Neuroscience</i> , 2014, 37, 293-304.	0.6	10
39	Interplay between periodic stimulation and GABAergic inhibition in striatal network oscillations. <i>PLoS ONE</i> , 2017, 12, e0175135.	1.1	10
40	Electrophysiological properties and projections of lateral hypothalamic parvalbumin positive neurons. <i>PLoS ONE</i> , 2018, 13, e0198991.	1.1	10
41	Recovery of Dynamics and Function in Spiking Neural Networks with Closed-Loop Control. <i>PLoS Computational Biology</i> , 2016, 12, e1004720.	1.5	10
42	Transient Response of Basal Ganglia Network in Healthy and Low-Dopamine State. <i>ENeuro</i> , 2022, 9, ENEURO.0376-21.2022.	0.9	8
43	Neural system prediction and identification challenge. <i>Frontiers in Neuroinformatics</i> , 2013, 7, 43.	1.3	6
44	Reactivation in Ventral Striatum during Hippocampal Ripples: Evidence for the Binding of Reward and Spatial Memories?. <i>Journal of Neuroscience</i> , 2008, 28, 9895-9897.	1.7	3
45	Recommendations for repositories and scientific gateways from a neuroscience perspective. <i>Scientific Data</i> , 2022, 9, 212.	2.4	3
46	Dynamics of multiple interacting excitatory and inhibitory populations with delays. <i>Physical Review E</i> , 2020, 102, 022308.	0.8	2
47	Correlated inputs to striatal population drive subthalamic nucleus hyper-synchronization. , 2021, , .		2
48	Information homeostasis as a fundamental principle governing the cell division and death. <i>Medical Hypotheses</i> , 2011, 77, 318-322.	0.8	1
49	Information homeostasis as a fundamental principle governing the cell division and death. <i>Nature Precedings</i> , 2011, , .	0.1	1
50	Synfire chains and gamma oscillations: two complementary modes of information transmission in cortical networks. <i>BMC Neuroscience</i> , 2013, 14, P226.	0.8	1
51	Design and simulation of D-latch and multiplexer using vMOS. , 2010, , .		0
52	Title is missing!. , 2019, 15, e1007432.		0
53	Title is missing!. , 2019, 15, e1007432.		0
54	Title is missing!. , 2019, 15, e1007432.		0

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55	Title is missing!. , 2019, 15, e1007432.		0
56	Facilitating the propagation of spiking activity in feedforward networks by including feedback. , 2020, 16, e1008033.		0
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59	Facilitating the propagation of spiking activity in feedforward networks by including feedback. , 2020, 16, e1008033.		0
60	Uncoupling the roles of firing rates and spike bursts in shaping the STN-GPe beta band oscillations. , 2020, 16, e1007748.		0
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