V Srinivasa Chakravarthy

List of Publications by Year
in descending order

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91 papers	1,743 citations	361413 20 h-index	330143 37 g-index
108 all docs	108 docs citations	108 times ranked	1780 citing authors

#	Article	IF	Citations
1	Motor symptoms in Parkinsonâ€™s disease: A unified framework. Neuroscience and Biobehavioral Reviews, 2016, 68, 727-740.	6.1	231
2	What do the basal ganglia do? A modeling perspective. Biological Cybernetics, 2010, 103, 237-253.	1.3	161
3	Neurodegenerative Diseases â€“ Is Metabolic Deficiency the Root Cause?. Frontiers in Neuroscience, 2020, 14, 213.	2.8	148
4	Scale-based clustering using the radial basis function network. IEEE Transactions on Neural Networks, 1996, 7, 1250-1261.	4.2	81
5	Informational dynamics of vasomotion in microvascular networks: a review. Acta Physiologica, 2011, 201, 193-218.	3.8	61
6	THE ROLE OF THE BASAL GANGLIA IN EXPLORATION IN A NEURAL MODEL BASED ON REINFORCEMENT LEARNING. International Journal of Neural Systems, 2006, 16, 111-124.	5.2	54
7	Exploring the cognitive and motor functions of the basal ganglia: an integrative review of computational cognitive neuroscience models. Frontiers in Computational Neuroscience, 2013, 7, 174.	2.1	54
8	A spiking Basal Ganglia model of synchrony, exploration and decision making. Frontiers in Neuroscience, 2015, 9, 191.	2.8	53
9	Modeling Basal Ganglia for Understanding Parkinsonian Reaching Movements. Neural Computation, 2011, 23, 477-516.	2.2	49
10	A Computational Model of Neuro-Glio-Vascular Loop Interactions. PLoS ONE, 2012, 7, e48802.	2.5	49
11	Teaching a humanoid robot to draw â€˜Shapesâ€™. Autonomous Robots, 2011, 31, 21-53.	4.8	46
12	An oscillatory neuromotor model of handwriting generation. International Journal on Document Analysis and Recognition, 2007, 10, 69-84.	3.4	41
13	An extended reinforcement learning model of basal ganglia to understand the contributions of serotonin and dopamine in risk-based decision making, reward prediction, and punishment learning. Frontiers in Computational Neuroscience, 2014, 8, 47.	2.1	36
14	A Computational Model of Loss of Dopaminergic Cells in Parkinson's Disease Due to Glutamate-Induced Excitotoxicity. Frontiers in Neural Circuits, 2019, 13, 11.	2.8	34
15	A computational model of altered gait patterns in parkinson's disease patients negotiating narrow doorways. Frontiers in Computational Neuroscience, 2014, 7, 190.	2.1	29
16	A network model of basal ganglia for understanding the roles of dopamine and serotonin in reward-punishment-risk based decision making. Frontiers in Computational Neuroscience, 2015, 9, 76.	2.1	29
17	The shape of handwritten characters. Pattern Recognition Letters, 2003, 24, 1901-1913.	4.2	26
18	The many facets of dopamine: Toward an integrative theory of the role of dopamine in managing the body's energy resources. Physiology and Behavior, 2018, 195, 128-141.	2.1	26

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19	Understanding Parkinsonian Handwriting Through a Computational Model of Basal Ganglia. Neural Computation, 2008, 20, 2491-2525.	2.2	25
20	Low-Dimensional Models of â€œNeuro-Glio-Vascular Unitâ€•for Describing Neural Dynamics under Normal and Energy-Starved Conditions. Frontiers in Neurology, 2016, 7, 24.	2.4	25
21	Interrelations between cognitive dysfunction and motor symptoms of Parkinsonâ€™s disease: behavioral and neural studies. Reviews in the Neurosciences, 2016, 27, 535-548.	2.9	23
22	Influence of energy deficiency on the subcellular processes of Substantia Nigra Pars Compacta cell for understanding Parkinsonian neurodegeneration. Scientific Reports, 2021, 11, 1754.	3.3	21
23	CHAOTIC SYNCHRONIZATION USING A NETWORK OF NEURAL OSCILLATORS. International Journal of Neural Systems, 2008, 18, 157-164.	5.2	20
24	Identifying the Basal Ganglia Network Model Markers for Medication-Induced Impulsivity in Parkinson's Disease Patients. PLoS ONE, 2015, 10, e0127542.	2.5	20
25	Computational model of precision grip in Parkinson's disease: a utility based approach. Frontiers in Computational Neuroscience, 2013, 7, 172.	2.1	19
26	Modeling the Contributions of Basal Ganglia and Hippocampus to Spatial Navigation Using Reinforcement Learning. PLoS ONE, 2012, 7, e47467.	2.5	19
27	A Neurocomputational Model of the Effect of Cognitive Load on Freezing of Gait in Parkinson's Disease. Frontiers in Human Neuroscience, 2016, 10, 649.	2.0	17
28	An efficient multiclassifier system based on convolutional neural network for offline handwritten Telugu character recognition. , 2013, , .		14
29	A hierarchical anti-Hebbian network model for the formation of spatial cells in three-dimensional space. Nature Communications, 2018, 9, 4046.	12.8	14
30	Vascular Dynamics Aid a Coupled Neurovascular Network Learn Sparse Independent Features: A Computational Model. Frontiers in Neural Circuits, 2016, 10, 7.	2.8	13
31	On Non-Invasive Measurement of Gastric Motility from Finger Photoplethysmographic Signal. Annals of Biomedical Engineering, 2010, 38, 3744-3755.	2.5	12
32	Do Basal Ganglia Amplify Willed Action by Stochastic Resonance? A Model. PLoS ONE, 2013, 8, e75657.	2.5	12
33	The influence of astrocytes on the width of orientation hypercolumns in visual cortex: A computational perspective. PLoS Computational Biology, 2017, 13, e1005785.	3.2	12
34	Computational Neuroscience Models of the Basal Ganglia. Cognitive Science and Technology, 2018, , .	0.4	12
35	A Cortico-Basal Ganglia Model to Understand the Neural Dynamics of Targeted Reaching in Normal and Parkinsonâ€™s Conditions. Cognitive Science and Technology, 2018, , 167-195.	0.4	12
36	Bistable dynamics of cardiac cell models coupled by dynamic gap junctions linked to Cardiac Memory. Biological Cybernetics, 2010, 102, 109-121.	1.3	11

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37	Decision making with long delays using networks of flip-flop neurons. , 2016, , .		11
38	A computational model of planarian regeneration. International Journal of Parallel, Emergent and Distributed Systems, 2017, 32, 331-347.	1.0	11
39	Basal Ganglia System as an Engine for Exploration. , 2014, , 1-15.		11
40	The mapping of eccentricity and meridional angle onto orthogonal axes in the primary visual cortex: an activity-dependent developmental model. Frontiers in Computational Neuroscience, 2015, 9, 3.	2.1	10
41	Electrode Position and Current Amplitude Modulate Impulsivity after Subthalamic Stimulation in Parkinsons Diseaseâ€"A Computational Study. Frontiers in Physiology, 2016, 7, 585.	2.8	10
42	A Model of Multisensory Integration and Its Influence on Hippocampal Spatial Cell Responses. IEEE Transactions on Cognitive and Developmental Systems, 2018, 10, 637-646.	3.8	10
43	Bipolar oscillations between positive and negative mood states in a computational model of Basal Ganglia. Cognitive Neurodynamics, 2020, 14, 181-202.	4.0	10
44	Simulation of Cardiac Arrhythmias Using a 2D Heterogeneous Whole Heart Model. Frontiers in Physiology, 2015, 6, 374.	2.8	9
45	An Oscillatory Neural Autoencoder Based on Frequency Modulation and Multiplexing. Frontiers in Computational Neuroscience, 2018, 12, 52.	2.1	9
46	ACE (Actorâ€"Criticâ€"Explorer) paradigm for reinforcement learning in basal ganglia: Highlighting the role of subthalamic and pallidal nuclei. Neurocomputing, 2010, 74, 205-218.	5.9	8
47	Reconstruction of gastric slow wave from finger photoplethysmographic signal using radial basis function neural network. Medical and Biological Engineering and Computing, 2011, 49, 1241-1247.	2.8	8
48	Probing the Role of Medication, DBS Electrode Position, and Antidromic Activation on Impulsivity Using a Computational Model of Basal Ganglia. Frontiers in Human Neuroscience, 2016, 10, 450.	2.0	8
49	A Global Orientation Map in the Primary Visual Cortex (V1): Could a Self Organizing Model Reveal Its Hidden Bias?. Frontiers in Neural Circuits, 2017, 10, 109.	2.8	8
50	A Biologically Plausible Architecture of the Striatum to Solve Context-Dependent Reinforcement Learning Tasks. Frontiers in Neural Circuits, 2017, 11, 45.	2.8	8
51	26th Annual Computational Neuroscience Meeting (CNS*2017): Part 2. BMC Neuroscience, 2017, 18, .	1.9	7
52	A Multi-Scale Computational Model of Excitotoxic Loss of Dopaminergic Cells in Parkinson's Disease. Frontiers in Neuroinformatics, 2020, 14, 34.	2.5	7
53	A Network Architecture for Bidirectional Neurovascular Coupling in Rat Whisker Barrel Cortex. Frontiers in Computational Neuroscience, 2021, 15, 638700.	2.1	7
54	A Cortico- Basal Ganglia Model for choosing an optimal rehabilitation strategy in Hemiparetic Stroke. Scientific Reports, 2019, 9, 13472.	3.3	6

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55	A Complex-Valued Oscillatory Neural Network for Storage and Retrieval of Multidimensional Aperiodic Signals. Frontiers in Computational Neuroscience, 2021, 15, 551111.	2.1	6
56	A Model of Motion Processing in the Visual Cortex Using Neural Field With Asymmetric Hebbian Learning. Frontiers in Neuroscience, 2019, 13, 67.	2.8	5
57	Modeling Serotoninâ€™s Contributions to Basal Ganglia Dynamics. Cognitive Science and Technology, 2018, , 215-243.	0.4	4
58	Artificial neurovascular network (ANVN) to study the accuracy vs. efficiency trade-off in an energy dependent neural network. Scientific Reports, 2021, 11, 13808.	3.3	4
59	Basal Ganglia System as an Engine for Exploration. , 2015, , 315-327.		4
60	A model of the neural substrates for exploratory dynamics in basal ganglia. Progress in Brain Research, 2013, 202, 389-414.	1.4	3
61	A Computational Neuromotor Model of the Role of Basal Ganglia and Hippocampus in Spatial Navigation. Lecture Notes in Computer Science, 2010, , 216-221.	1.3	3
62	A Multiscale, Systems-Level, Neuropharmacological Model of Cortico-Basal Ganglia System for Arm Reaching Under Normal, Parkinsonian, and Levodopa Medication Conditions. Frontiers in Computational Neuroscience, 2021, 15, 756881.	2.1	3
63	A Multi-Scale Computational Model of Levodopa-Induced Toxicity in Parkinson's Disease. Frontiers in Neuroscience, 2022, 16, 797127.	2.8	3
64	Measurement of gastric oscillations from finger photoplethysmographic signal using autoregressive model. , 2010, , .		2
65	The Basal Ganglia System as an Engine for Exploration. Cognitive Science and Technology, 2018, , 59-96.	0.4	2
66	Modeling the Effect of Environmental Geometries on Grid Cell Representations. Frontiers in Neural Circuits, 2018, 12, 120.	2.8	2
67	Is There a Better Way to Assess Parkinsonian Motor Symptoms?â€”Experimental and Modelling Approach. Series in Bioengineering, 2022, , 151-167.	0.6	2
68	Pulse rate variability and gastric electric power in fasting and postprandial conditions. , 2009, 2009, 2639-42.		2
69	A Complex-Valued Hopfield Neural Network. , 2009, , 79-103.		2
70	The Influence of Neural Activity and Neural Cytoarchitecture on Cerebrovascular Arborization: A Computational Model. Frontiers in Neuroscience, 0, 16, .	2.8	2
71	Effect of gastric myoelectric activity on pulse rate variability in fasting and postprandial conditions. International Journal of Healthcare Technology and Management, 2011, 12, 434.	0.1	1
72	A computational basal ganglia model to assess the role of STN-DBS on Impulsivity in Parkinson's disease. , 2015, , .		1

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73	A comparative study of complexity of handwritten Bharati characters with that of major Indian scripts. , 2017, , .		1
74	Classical Computational Approaches to Modeling the Basal Ganglia. Cognitive Science and Technology, 2018, , 41-58.	0.4	1
75	The Basal Ganglia: Summary and Future Modeling Research. Cognitive Science and Technology, 2018, , 285-296.	0.4	1
76	Saccade Velocity Driven Oscillatory Network Model of Grid Cells. Frontiers in Computational Neuroscience, 2019, 12, 107.	2.1	1
77	A Neuro-computational Model of Pallidal vs. Subthalamic Deep Brain Stimulation Effect on Synchronization at Tremor Frequency in Parkinsonâ€™s Disease. Springer Series in Cognitive and Neural Systems, 2019, , 3-12.	0.1	1
78	A phase dynamic model of systematic error in simple copying tasks. Biological Cybernetics, 2009, 101, 201-213.	1.3	0
79	A study of the switching function of the Subthalamic Nucleus in saccade generation using a computational model of Basal Ganglia. , 2010, , .		0
80	Modulation of neural firing through intracellular ATP dynamics governed by energy feedback from the vascular system. BMC Neuroscience, 2015, 16, .	1.9	0
81	Could the prior development of the retinotopic map account for the radial bias in the orientation map in V1?. BMC Neuroscience, 2015, 16, .	1.9	0
82	Could the prior development of the retinotopic map account for the radial bias in the orientation map in V1?. BMC Neuroscience, 2015, 16, .	1.9	0
83	Synchronization and Exploration in Basal Gangliaâ€”A Spiking Network Model. Cognitive Science and Technology, 2018, , 97-112.	0.4	0
84	Modeling Precision Grip Force in Controls and Parkinsonâ€™s Disease Patients. Cognitive Science and Technology, 2018, , 131-151.	0.4	0
85	A Basal Ganglia Model of Freezing of Gait in Parkinsonâ€™s Disease. Cognitive Science and Technology, 2018, , 113-129.	0.4	0
86	An AI-Based Detection System for Mudrabharati: A Novel Unified Fingerspelling System for Indic Scripts. Lecture Notes in Computer Science, 2021, , 425-434.	1.3	0
87	An Oscillatory Neural Network Model for Birdsong Learning and Generation: Implications for the Role of Dopamine in Song Learning. Cognitive Science and Technology, 2018, , 255-284.	0.4	0
88	Modeling Serotoninâ€™s Contributions to Basal Ganglia Dynamics in Parkinsonâ€™s Disease with Impulse Control Disorders. Cognitive Science and Technology, 2018, , 245-253.	0.4	0
89	Go-Explore-NoGo (GEN) Paradigm in Decision Makingâ€”A Multimodel Approach. Cognitive Science and Technology, 2018, , 153-166.	0.4	0
90	Life in Motion. , 2019, , 245-284.		0

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91	Basal Ganglia System as an Engine for Exploration. , 2022, , 353-365.		0