Antonio C Roque

List of Publications by Year
in descending order

99 papers	939 citations	516215 16 h-index	610482 24 g-index
108 all docs	108 docs citations	108 times ranked	1005 citing authors

#	Article	IF	Citations
1	Effects of Altered Excitation-Inhibition Balance on Decision Making in a Cortical Circuit Model. Journal of Neuroscience, 2022, 42, 1035-1053.	1.7	33
2	Conductance-based models and the fragmentation problem: A case study based on hippocampal CA1 pyramidal cell models and epilepsy. Epilepsy and Behavior, 2021, 121, 106841.	0.9	0
3	Modelos de redes de neurÃ´nios para o neocÃ³rtex e fenÃ´menos emergentes observados. Revista Brasileira De Ensino De Fisica, 2021, 43, .	0.2	0
4	NetPyNE Implementation and Scaling of the Potjans-Diesmann Cortical Microcircuit Model. Neural Computation, 2021, 33, 1993-2032.	1.3	5
5	Building a model of the brain: from detailed connectivity maps to network organization. European Physical Journal: Special Topics, 2021, 230, 2887-2909.	1.2	4
6	Dynamical phenomena in complex networks: fundamentals and applications. European Physical Journal: Special Topics, 2021, 230, 2711-2716.	1.2	7
7	A unified theory of E/I synaptic balance, quasicritical neuronal avalanches and asynchronous irregular spiking. Journal of Physics Complexity, 2021, 2, 045001.	0.9	11
8	Self-sustained activity of low firing rate in balanced networks. Physica A: Statistical Mechanics and Its Applications, 2020, 537, 122671.	1.2	19
9	Binding of Filamentous Actin to CaMKII as Potential Regulation Mechanism of Bidirectional Synaptic Plasticity by Î² CaMKII in Cerebellar Purkinje Cells. Scientific Reports, 2020, 10, 9019.	1.6	6
10	Goalkeeper Game: A New Assessment Tool for Prediction of Gait Performance Under Complex Condition in People With Parkinson's Disease. Frontiers in Aging Neuroscience, 2020, 12, 50.	1.7	1
11	Optimal Interplay between Synaptic Strengths and Network Structure Enhances Activity Fluctuations and Information Propagation in Hierarchical Modular Networks. Brain Sciences, 2020, 10, 228.	1.1	4
12	Modeling Hippocampal CA1 Gabaergic Synapses of Audiogenic Rats. International Journal of Neural Systems, 2020, 30, 2050022.	3.2	2
13	Firing properties of ventral medullary respiratory neurons in sinoâ€aortic denervated rats. Experimental Physiology, 2019, 104, 39-49.	0.9	1
14	Asymmetrical voltage response in resonant neurons shaped by nonlinearities. Chaos, 2019, 29, 103135.	1.0	7
15	AplicaÃ§Ãµes da teoria da informaÃ§Ã£o Ã neurociÃªncia. Revista Brasileira De Ensino De Fisica, 2019, 41, .	0.2	0
16	Interplay of activation kinetics and the derivative conductance determines resonance properties of neurons. Physical Review E, 2018, 97, 042408.	0.8	6
17	Non-Decaying postsynaptics potentials and delayed spikes in hippocampal pyramidal neurons generated by a zero slope conductance created by the persistent Na⁺ current. Channels, 2018, 12, 81-88.	1.5	2
18	Molecular mechanisms of detection and discrimination of dynamic signals. Scientific Reports, 2018, 8, 2480.	1.6	2

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19	Dynamics of spontaneous activity in random networks with multiple neuron subtypes and synaptic noise. Journal of Computational Neuroscience, 2018, 45, 1-28.	0.6	22
20	Intrinsic and synaptic properties of hippocampal CA1 pyramidal neurons of the Wistar Audiogenic Rat (WAR) strain, a genetic model of epilepsy. Scientific Reports, 2018, 8, 10412.	1.6	21
21	Self-Consistent Scheme for Spike-Train Power Spectra in Heterogeneous Sparse Networks. Frontiers in Computational Neuroscience, 2018, 12, 9.	1.2	19
22	A Negative Slope Conductance of the Persistent Sodium Current Prolongs Subthreshold Depolarizations. Biophysical Journal, 2017, 113, 2207-2217.	0.2	22
23	The role of negative conductances in neuronal subthreshold properties and synaptic integration. Biophysical Reviews, 2017, 9, 827-834.	1.5	13
24	Ih Equalizes Membrane Input Resistance in a Heterogeneous Population of Fusiform Neurons in the Dorsal Cochlear Nucleus. Frontiers in Cellular Neuroscience, 2016, 10, 249.	1.8	14
25	Mechanisms of Self-Sustained Oscillatory States in Hierarchical Modular Networks with Mixtures of Electrophysiological Cell Types. Frontiers in Computational Neuroscience, 2016, 10, 23.	1.2	14
26	Phase transitions and self-organized criticality in networks of stochastic spiking neurons. Scientific Reports, 2016, 6, 35831.	1.6	65
27	Modelling intracellular competition for calcium: kinetic and thermodynamic control of different molecular modes of signal decoding. Scientific Reports, 2016, 6, 23730.	1.6	19
28	Stochastic Induction of Long-Term Potentiation and Long-Term Depression. Scientific Reports, 2016, 6, 30899.	1.6	18
29	A cortical multi-layered model and the properties of its internally-generated activity. BMC Neuroscience, 2015, 16, .	0.8	0
30	Effect of synaptic plasticity on functional connectivity and global activity of a neocortical network model. BMC Neuroscience, 2015, 16, .	0.8	2
31	Unravelling how Î²CaMKII controls the direction of plasticity at parallel fibre-Purkinje cell synapses. AIP Conference Proceedings, 2015, , .	0.3	0
32	Electrical responses of three classes of granule cells of the olfactory bulb to synaptic inputs in different dendritic locations. Frontiers in Computational Neuroscience, 2014, 8, 128.	1.2	3
33	Combined Role of Seizure-Induced Dendritic Morphology Alterations and Spine Loss in Newborn Granule Cells with Mossy Fiber Sprouting on the Hyperexcitability of a Computer Model of the Dentate Gyrus. PLoS Computational Biology, 2014, 10, e1003601.	1.5	25
34	Computational models of dentate gyrus with epilepsy-induced morphological alterations in granule cells. Epilepsy and Behavior, 2014, 38, 63-70.	0.9	13
35	A computational model for exploratory activity of rats with different anxiety levels in elevated plus-maze. Journal of Neuroscience Methods, 2014, 236, 44-50.	1.3	20
36	Î²CaMKII regulates bidirectional long-term plasticity in cerebellar Purkinje cells by a CaMKII/PP2B switch mechanism. BMC Neuroscience, 2014, 15, .	0.8	1

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37	Electrical coupling in the retina ganglion cell layer increases the dynamic range. BMC Neuroscience, 2014, 15, .	0.8	0
38	Sustained oscillations, irregular firing, and chaotic dynamics in hierarchical modular networks with mixtures of electrophysiological cell types. Frontiers in Computational Neuroscience, 2014, 8, 103.	1.2	22
39	Archetypes and Outliers in the Neuromorphological Space. Springer Series in Computational Neuroscience, 2014, , 41-59.	0.3	1
40	Lateral inhibition and odor discrimination in a model of the olfactory bulb. BMC Neuroscience, 2013, 14, .	0.8	0
41	A novel anxiety index for the rat behavior in the elevated plus-maze. BMC Neuroscience, 2013, 14, .	0.8	1
42	Self-sustained activity in neural networks: influence of network topology and cell types. BMC Neuroscience, 2013, 14, .	0.8	1
43	Foreword to the Special Issue on LASCON 2012. Journal of Neuroscience Methods, 2013, 220, 99.	1.3	0
44	Mathematical methods to model rodent behavior in the elevated plus-maze. Journal of Neuroscience Methods, 2013, 220, 141-148.	1.3	16
45	The Periglomerular Cell of the Olfactory Bulb and its Role in Controlling Mitral Cell Spiking: A Computational Model. PLoS ONE, 2013, 8, e56148.	1.1	16
46	Dynamic Range of Vertebrate Retina Ganglion Cells: Importance of Active Dendrites and Coupling by Electrical Synapses. PLoS ONE, 2012, 7, e48517.	1.1	21
47	Role of morphological changes in newly born granule cells of hippocampus after status epilepticus induced by pilocarpine in hyperexcitability. BMC Neuroscience, 2012, 13, .	0.8	2
48	Morphological Alterations in Newly Born Dentate Gyrus Granule Cells That Emerge after Status Epilepticus Contribute to Make Them Less Excitable. PLoS ONE, 2012, 7, e40726.	1.1	13
49	A Model Based on Genetic Algorithm for Investigation of the Behavior of Rats in the Elevated Plus-Maze. Lecture Notes in Computer Science, 2012, , 151-158.	1.0	4
50	Interplay of periglomerular and granule cell inhibitory synapses on mitral cell spiking. BMC Neuroscience, 2011, 12, .	0.8	0
51	Cross-modular processing in a spiking neural network model. BMC Neuroscience, 2011, 12, .	0.8	0
52	Pattern Recognition Using a Recurrent Neural Network Inspired on the Olfactory Bulb. Lecture Notes in Computer Science, 2011, , 275-285.	1.0	0
53	A three-compartment conductance-based model of the rat olfactory receptor neuron. BMC Neuroscience, 2010, 11, .	0.8	0
54	Characterization of the rat exploratory behavior in the elevated plus-maze with Markov chains. Journal of Neuroscience Methods, 2010, 193, 288-295.	1.3	15

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55	Use of Evolutionary Robots as an Auxiliary Tool for Developing Behavioral Models of Rats in an Elevated Plus-Maze. , 2010, , .		5
56	A Computational Study on the Role of Gap Junctions and Rod Ih Conductance in the Enhancement of the Dynamic Range of the Retina. PLoS ONE, 2009, 4, e6970.	1.1	45
57	Reduced compartmental Hodgkin-Huxley type models of three different cortical neuron classes. BMC Neuroscience, 2009, 10, .	0.8	0
58	Reduced compartmental model of the periglomerular cell of the mammalian olfactory bulb. BMC Neuroscience, 2009, 10, .	0.8	2
59	Stability and sensitivity analysis of reduced compartmental models of primary visual cortical neurons. BMC Neuroscience, 2009, 10, .	0.8	0
60	A Java-based simulation environment for networks of simplified neuron models. BMC Neuroscience, 2009, 10, .	0.8	0
61	Characterization of rat behavior in the elevated plus-maze using a directed graph. Journal of Neuroscience Methods, 2009, 184, 251-255.	1.3	10
62	The non-equilibrium nature of culinary evolution. New Journal of Physics, 2008, 10, 073020.	1.2	35
63	Dependent component analysis for the magnetogastrographic detection of human electrical response activity. Physiological Measurement, 2007, 28, 1029-1044.	1.2	8
64	Respiratory rhythm and EEG oscillations in the olfactory system: a study using a biologically detailed model. BMC Neuroscience, 2007, 8, .	0.8	0
65	The effect of gap junctions on the dynamic range in a model of the rod photoreceptors layer. BMC Neuroscience, 2007, 8, .	0.8	0
66	A large-scale realistic model of V1 exhibiting orientation selectivity diversity and laminar dependence. BMC Neuroscience, 2007, 8, .	0.8	1
67	AplicaÃ§Ã£o de Redes Neurais Artificiais na ClassificaÃ§Ã£o de PadrÃµes Posturais em CrianÃ§as Respiradoras Bucais e Nasais. Revista De Informatica Teorica E Aplicada, 2007, 14, 91-107.	0.2	3
68	Extraction of Gastric Electrical Response Activity from Magnetogastrographic Recordings by DCA. Lecture Notes in Computer Science, 2007, , 585-592.	1.0	0
69	A realistic model of rod photoreceptor for use in a retina network model. Neurocomputing, 2006, 69, 1020-1024.	3.5	23
70	A computational model of the primary auditory cortex exhibiting plasticity in the frequency representation. Neurocomputing, 2006, 70, 3-8.	3.5	2
71	A possible mechanism of curvature coding in early vision. Neurocomputing, 2005, 65-66, 117-124.	3.5	1
72	Signal compression in the sensory periphery. Neurocomputing, 2005, 65-66, 691-696.	3.5	25

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73	Fetal source extraction from magnetocardiographic recordings by dependent component analysis. Physics in Medicine and Biology, 2005, 50, 4457-4464.	1.6	12
74	Self-sustained waves in a computational model of the olfactory epithelium with gap junctions. Neurocomputing, 2004, 58-60, 1033-1039.	3.5	2
75	A Dynamical Model of Fast Cortical Reorganization. Journal of Computational Neuroscience, 2004, 16, 177-201.	0.6	9
76	A biophysical model of vertebrate olfactory epithelium and bulb exhibiting gap junction dependent odor-evoked spatiotemporal patterns of activity. BioSystems, 2004, 73, 25-43.	0.9	17
77	Sensitivity of AMPA receptor channel to calcium oscillations: a computational study. Neurocomputing, 2003, 52-54, 341-346.	3.5	1
78	Conflict as a determinant of rat behavior in three types of elevated plus-maze. Behavioural Processes, 2003, 63, 87-93.	0.5	25
79	Shannon's entropy applied to the analysis of tonotopic reorganization in a computational model of classical conditioning. Neurocomputing, 2002, 44-46, 359-364.	3.5	3
80	Simulation of a vertebrate receptor cell of the olfactory epithelium for use in network models. Neurocomputing, 2002, 44-46, 177-182.	3.5	5
81	Using information theory for the analysis of cortical reorganization in a realistic computational model of the somatosensory system. Neurocomputing, 2002, 44-46, 923-928.	3.5	1
82	A biologically plausible neural network model of the primate primary visual system. Neurocomputing, 2002, 44-46, 957-963.	3.5	2
83	Mammography and Computerized Decision Systems. Annals of the New York Academy of Sciences, 2002, 980, 83-94.	1.8	23
84	Physics of psychophysics: Stevens and Weber-Fechner laws are transfer functions of excitable media. Physical Review E, 2002, 65, 060901.	0.8	60
85	Interference with the GABAergic system in the dorsolateral telencephalon and modulation of the electric organ discharge frequency in the weakly electric fish Gymnotus carapo. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2001, 187, 925-933.	0.7	6
86	A minimal model for excitable and bursting elements. Neurocomputing, 2001, 38-40, 255-261.	3.5	24
87	Alterations of maps induced by blockage of synaptic receptors in a computer simulation of the somatosensory system. Neurocomputing, 2001, 38-40, 1453-1459.	3.5	2
88	A realistic model of tonotopic reorganization in the auditory cortex in response to cochlear lesions. Neurocomputing, 2001, 38-40, 1169-1174.	3.5	0
89	Anxiety-like behavior in rats: a computational model. Neural Networks, 2000, 13, 21-29.	3.3	22
90	Realistic computer simulation of cortical lesion induced imbalances in properties of somatotopic maps. Neurocomputing, 2000, 32-33, 453-459.	3.5	4

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91	A biologically plausible computational model of classical conditioning induced reorganization of tonotopic maps in the auditory cortex. Neurocomputing, 2000, 32-33, 685-691.	3.5	3
92	Biologically Plausible Models of Topographic Map Formation in the Somatosensory and Auditory Cortices. International Journal of Neural Systems, 1999, 09, 265-271.	3.2	4
93	A realistic computational model of formation and variability of tonotopic maps in the auditory cortex. Neurocomputing, 1999, 26-27, 355-359.	3.5	5
94	Computational model of topographic reorganization in somatosensory cortex in response to digit lesions. Neurocomputing, 1999, 26-27, 435-441.	3.5	4
95	Segmentation of digitized mammograms using self-organizing maps in a breast cancer computer aided diagnosis system. , 0, , .		3
96	Impact of the activation rate of the hyperpolarization- activated current $$hbox {I}_{mathrm{h}}$$ on the neuronal membrane time constant and synaptic potential duration. European Physical Journal: Special Topics, 0, , 1.	1.2	2
97	Modeling and characterizing stochastic neurons based on in vitro voltage-dependent spike probability functions. European Physical Journal: Special Topics, 0, , 1.	1.2	1
98	NEMOS: A Java-Based Tool for Neural Models Simulations. Frontiers in Neuroinformatics, 0, 3, .	1.3	0
99	Granger causality in the frequency domain: derivation and applications. Revista Brasileira De Ensino De Fisica, 0, 42, .	0.2	3