Roman M Borisyuk

List of Publications by Year
in descending order

81	1,478	304602 22	377752 34
papers	citations	h-index	g-index

86	86	86	1118
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Bifurcation analysis of a neural network model. Biological Cybernetics, 1992, 66, 319-325.	0.6	129
2	Dynamics and bifurcations of two coupled neural oscillators with different connection types. Bulletin of Mathematical Biology, 1995, 57, 809-840.	0.9	90
3	Synchronization in a neural network of phase oscillators with the central element. Biological Cybernetics, 1994, 71, 177-185.	0.6	74
4	Models of neural dynamics in brain information processing â€" the developments of 'the decade'. Physics-Uspekhi, 2002, 45, 1073-1095.	0.8	61
5	Axon and dendrite geography predict the specificity of synaptic connections in a functioning spinal cord network. Neural Development, 2007, 2, 17.	1.1	54
6	A model of theta rhythm production in the septal-hippocampal system and its modulation by ascending brain stem pathways. Hippocampus, 2000, 10, 698-716.	0.9	52
7	Oscillatory model of attention-guided object selection and novelty detection. Neural Networks, 2004, 17, 899-915.	3.3	51
8	Can Simple Rules Control Development of a Pioneer Vertebrate Neuronal Network Generating Behavior?. Journal of Neuroscience, 2014, 34, 608-621.	1.7	48
9	Dynamics of neural networks with a central element. Neural Networks, 1999, 12, 441-454.	3.3	47
10	An Oscillatory Neural Model of Multiple Object Tracking. Neural Computation, 2006, 18, 1413-1440.	1.3	46
11	Information coding on the basis of synchronization of neuronal activity. BioSystems, 1997, 40, 3-10.	0.9	36
12	Statistical technique for analysing functional connectivity of multiple spike trains. Journal of Neuroscience Methods, 2011, 196, 201-219.	1.3	35
13	In-phase and antiphase self-oscillations in a model of two electrically coupled pacemakers. Biological Cybernetics, 1994, 71, 153-160.	0.6	34
14	Object selection by an oscillatory neural network. BioSystems, 2002, 67, 103-111.	0.9	33
15	A new statistical method for identifying interconnections between neuronal network elements. Biological Cybernetics, 1985, 52, 301-306.	0.6	30
16	A Network Model of Local Field Potential Activity in Essential Tremor and the Impact of Deep Brain Stimulation. PLoS Computational Biology, 2017, 13, e1005326.	1.5	26
17	Oscillatory activity in the neural networks of spiking elements. BioSystems, 2002, 67, 3-16.	0.9	25
18	Stochasticity and functionality of neural systems: Mathematical modelling of axon growth in the spinal cord of tadpole. BioSystems, 2008, 93, 101-114.	0.9	25

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19	The emergence of two anti-phase oscillatory neural populations in a computational model of the Parkinsonian globus pallidus. Frontiers in Computational Neuroscience, 2013, 7, 173.	1.2	25
20	A Developmental Approach to Predicting Neuronal Connectivity from Small Biological Datasets: A Gradient-Based Neuron Growth Model. PLoS ONE, 2014, 9, e89461.	1.1	25
21	Oscillatory models of the hippocampus: A study of spatio-temporal patterns of neural activity. Biological Cybernetics, 1999, 81, 359-371.	0.6	24
22	Visual perception of ambiguous figures: synchronization based neural models. Biological Cybernetics, 2009, 100, 491-504.	0.6	24
23	Memorizing and recalling spatialâ€“temporal patterns in an oscillator model of the hippocampus. BioSystems, 1998, 48, 3-10.	0.9	23
24	A neural model of selective attention and object segmentation in the visual scene: An approach based on partial synchronization and star-like architecture of connections. Neural Networks, 2009, 22, 707-719.	3.3	22
25	The Generation of Antiphase Oscillations and Synchrony by a Rebound-Based Vertebrate Central Pattern Generator. Journal of Neuroscience, 2014, 34, 6065-6077.	1.7	22
26	An oscillatory neural network model of sparse distributed memory and novelty detection. BioSystems, 2000, 58, 265-272.	0.9	20
27	Oscillatory neural network model of attention focus formation and control. BioSystems, 2003, 71, 29-38.	0.9	17
28	Selective attention model with spiking elements. Neural Networks, 2009, 22, 890-900.	3.3	17
29	Modeling the Connectome of a Simple Spinal Cord. Frontiers in Neuroinformatics, 2011, 5, 20.	1.3	17
30	Spatiotemporal visualization of deep brain stimulationâ€induced effects in the subthalamic nucleus. European Journal of Neuroscience, 2012, 36, 2252-2259.	1.2	17
31	The correlation grid: analysis of synchronous spiking in multi-dimensional spike train data and identification of feasible connection architectures. BioSystems, 2005, 79, 223-233.	0.9	16
32	Bifurcation study of phase oscillator systems with attractive and repulsive interaction. Physical Review E, 2014, 90, 022911.	0.8	16
33	Studying the role of axon fasciculation during development in a computational model of the Xenopus tadpole spinal cord. Scientific Reports, 2017, 7, 13551.	1.6	16
34	A simple decision to move in response to touch reveals basic sensory memory and mechanisms for variable response times. Journal of Physiology, 2018, 596, 6219-6233.	1.3	16
35	A Population Model of Deep Brain Stimulation in Movement Disorders From Circuits to Cells. Frontiers in Human Neuroscience, 2020, 14, 55.	1.0	16
36	Visualisation of synchronous firing in multi-dimensional spike trains. BioSystems, 2002, 67, 265-279.	0.9	14

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37	Bifurcations in phase oscillator networks with a central element. Physica D: Nonlinear Phenomena, 2012, 241, 1072-1089.	1.3	14
38	An Interactive Channel Model of the Basal Ganglia: Bifurcation Analysis Under Healthy and Parkinsonian Conditions. Journal of Mathematical Neuroscience, 2013, 3, 14.	2.4	14
39	Structural and functional properties of a probabilistic model of neuronal connectivity in a simple locomotor network. ELife, 2018, 7, .	2.8	14
40	Spiking neural network model for memorizing sequences with forward and backward recall. BioSystems, 2013, 112, 214-223.	0.9	13
41	Synchronization of neural activity and information processing. Behavioral and Brain Sciences, 1998, 21, 833-833.	0.4	12
42	Competition for synchronization in a phase oscillator system. Physica D: Nonlinear Phenomena, 2013, 261, 114-124.	1.3	12
43	Reaction times in visual search can be explained by a simple model of neural synchronization. Neural Networks, 2017, 87, 1-7.	3.3	12
44	The decision to move: response times, neuronal circuits and sensory memory in a simple vertebrate. Proceedings of the Royal Society B: Biological Sciences, 2019, 286, 20190297.	1.2	12
45	Tadpole VR: virtual reality visualization of a simulated tadpole spinal cord. Virtual Reality, 2021, 25, 1-17.	4.1	12
46	Oscillatory network controlling six-legged locomotion. Neural Networks, 1998, 11, 1449-1460.	3.3	11
47	Computational Models of Predictive and Memory-Related Functions of the Hippocampus. Reviews in the Neurosciences, 1999, 10, 213-32.	1.4	10
48	Winner-take-all in a phase oscillator system with adaptation. Scientific Reports, 2018, 8, 416.	1.6	10
49	Bifurcations of Limit Cycles in a Reduced Model of the Xenopus Tadpole Central Pattern Generator. Journal of Mathematical Neuroscience, 2018, 8, 10.	2.4	10
50	Forecasting the 2005 General Election: A Neural Network Approach. British Journal of Politics and International Relations, 2005, 7, 199-209.	1.8	9
51	From decision to action: Detailed modelling of frog tadpoles reveals neuronal mechanisms of decision-making and reproduces unpredictable swimming movements in response to sensory signals. PLoS Computational Biology, 2021, 17, e1009654.	1.5	9
52	Oscillations and waves in the models of interactive neural populations. BioSystems, 2006, 86, 53-62.	0.9	7
53	To swim or not to swim: A population-level model of Xenopus tadpole decision making and locomotor behaviour. BioSystems, 2017, 161, 3-14.	0.9	6
54	A computational model of familiarity detection for natural pictures, abstract images, and random patterns: Combination of deep learning and anti-Hebbian training. Neural Networks, 2021, 143, 628-637.	3.3	6

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55	The Representation of Neural Data Using Visualization. Information Visualization, 2004, 3, 245-256.	1.2	4
56	A theory of epineuronal memory. Neural Networks, 2004, 17, 1427-1436.	3.3	4
57	iRaster: A novel information visualization tool to explore spatiotemporal patterns in multiple spike trains. Journal of Neuroscience Methods, 2010, 194, 158-171.	1.3	4
58	Analysis of Oscillatory Regimes of a Coupled Neural Oscillator System with Application to Visual Cortex Modeling. Perspectives in Neural Computing, 1992, , 208-225.	0.1	4
59	Metastable states, phase transitions, and persistent neural activity. BioSystems, 2007, 89, 30-37.	0.9	3
60	Advanced correlation grid: Analysis and visualisation of functional connectivity among multiple spike trains. Journal of Neuroscience Methods, 2017, 286, 78-101.	1.3	3
61	Oscillatory Neural Models of the Basal Ganglia for Action Selection in Healthy and Parkinsonian Cases. Springer Series in Bio-/neuroinformatics, 2017, , 149-189.	0.1	3
62	Oscillatory model of novelty detection. Network: Computation in Neural Systems, 2001, 12, 1-20.	2.2	3
63	Gamma-ray energy determination using neural network algorithms for an imaging silicon calorimeter. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1996, 381, 512-516.	0.7	2
64	Partial synchronization of neural activity and information processing. , 2009, , .		2
65	Selective Attention Model of Moving Objects. Lecture Notes in Computer Science, 2008, , 358-367.	1.0	2
66	Temporal Structure of Neural Activity and Modelling of Information Processing in the Brain. Lecture Notes in Computer Science, 2001, , 237-254.	1.0	2
67	Modeling ?preattention? and ?attention? information processing by synchronization of neural activity. Radiophysics and Quantum Electronics, 1994, 37, 607-614.	0.1	1
68	Types of spike discharge and character of correlation between neurons in the rat neostriatum. Neurophysiology, 1982, 13, 406-413.	0.2	0
69	Analysis of spike discharge and character of interconnection of identified output neurons in the rat neostriatum. Neurophysiology, 1983, 14, 342-346.	0.2	0
70	Encyclopedia of computational neuroscience: The end of the second millennium. Behavioral and Brain Sciences, 2000, 23, 534-535.	0.4	0
71	The puzzle of chaotic neurodynamics. Behavioral and Brain Sciences, 2001, 24, 812-813.	0.4	0
72	Stochastic dynamics and partial synchronization of stimulus-driven neural activity. , 0, , .		0

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73	Modelling selective attention with Hodgkin-Huxley neurons. BMC Neuroscience, 2007, 8, .	0.8	0
74	Modeling perceptual multi-stability with Hodgkin-Huxley neurons. BMC Neuroscience, 2008, 9, .	0.8	0
75	Model of the tadpole spinal cord: The interplay of deterministic and stochastic processes in development of specialised neural circuit. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 16-20.	0.4	0
76	Gradient based spinal cord axogenesis and locomotor connectome of the hatchling Xenopus tadpole. BMC Neuroscience, 2011, 12, .	0.8	0
77	The dynamic separation of pallidal neurons into anti-phase oscillatory groups under Parkinsonian conditions in a computational model. BMC Neuroscience, 2014, 15, .	0.8	0
78	Bifurcation analysis of anti-phase oscillations and synchrony in the tadpole central pattern generator. BMC Neuroscience, 2014, 15, .	0.8	0
79	A simple method defines 3D morphology and axon projections of filled neurons in a small CNS volume: Steps toward understanding functional network circuitry. Journal of Neuroscience Methods, 2021, 351, 109062.	1.3	0
80	Neural Connectivity and Dynamical Regimes of Neural Activity in a Network of Interactive Populations. Lecture Notes in Computer Science, 2005, , 39-48.	1.0	0
81	Biological Brain and Binary Code: Quality of Coding for Face Recognition. Lecture Notes in Computer Science, 2012, , 427-434.	1.0	0