Ernst Niebur

List of Publications by Year
in descending order

101 papers	5,605 citations	159358 30 h-index	88477 70 g-index
134 all docs	134 docs citations	134 times ranked	5101 citing authors

#	Article	IF	Citations
1	Modeling the role of salience in the allocation of overt visual attention. Vision Research, 2002, 42, 107-123.	0.7	1,158
2	Neural Correlates of High-Gamma Oscillations (60â€"200 Hz) in Macaque Local Field Potentials and Their Potential Implications in Electrocorticography. Journal of Neuroscience, 2008, 28, 11526-11536.	1.7	592
3	Scene content selected by active vision. Spatial Vision, 2003, 16, 125-154.	1.4	261
4	A Neural Model of Figureâ€"Ground Organization. Journal of Neurophysiology, 2007, 97, 4310-4326.	0.9	231
5	High-frequency gamma activity (80â€"150Hz) is increased in human cortex during selective attention. Clinical Neurophysiology, 2008, 119, 116-133.	0.7	201
6	Collective frequencies and metastability in networks of limit-cycle oscillators with time delay. Physical Review Letters, 1991, 67, 2753-2756.	2.9	195
7	A Model for Neuronal Competition During Development. Science, 2008, 320, 369-373.	6.0	168
8	Self-organized criticality occurs in non-conservative neuronal networks during â€˜upâ€™ states. Nature Physics, 2010, 6, 801-805.	6.5	158
9	Modeling the Temporal Dynamics of IT Neurons in Visual Search: A Mechanism for Top-Down Selective Attention. Journal of Cognitive Neuroscience, 1996, 8, 311-327.	1.1	157
10	A model for the neuronal implementation of selective visual attention based on temporal correlation among neurons. Journal of Computational Neuroscience, 1994, 1, 141-158.	0.6	154
11	An oscillation-based model for the neuronal basis of attention. Vision Research, 1993, 33, 2789-2802.	0.7	149
12	A Generalized Linear Integrate-and-Fire Neural Model Produces Diverse Spiking Behaviors. Neural Computation, 2009, 21, 704-718.	1.3	142
13	Synchrony: a neuronal mechanism for attentional selection?. Current Opinion in Neurobiology, 2002, 12, 190-194.	2.0	139
14	Theory of the locomotion of nematodes. Biophysical Journal, 1991, 60, 1132-1146.	0.2	120
15	Effect of Stimulus Intensity on the Spikeâ€"Local Field Potential Relationship in the Secondary Somatosensory Cortex. Journal of Neuroscience, 2008, 28, 7334-7343.	1.7	118
16	Texture contrast attracts overt visual attention in natural scenes. European Journal of Neuroscience, 2004, 19, 783-789.	1.2	88
17	A model of proto-object based saliency. Vision Research, 2014, 94, 1-15.	0.7	84
18	Mechanisms of perceptual organization provide auto-zoom and auto-localization for attention to objects. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 7583-7588.	3.3	79

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19	Everyone knows what is interesting: Salient locations which should be fixated. Journal of Vision, 2009, 9, 25-25.	0.1	64
20	Variable-Resolution Displays: A Theoretical, Practical, and Behavioral Evaluation. Human Factors, 2002, 44, 611-629.	2.1	57
21	Neural mechanisms of selective attention in the somatosensory system. Journal of Neurophysiology, 2016, 116, 1218-1231.	0.9	57
22	Theory of the locomotion of nematodes: Control of the somatic motor neurons by interneurons. Mathematical Biosciences, 1993, 118, 51-82.	0.9	56
23	Synchrony and the binding problem in macaque visual cortex. Journal of Vision, 2008, 8, 30.	0.1	56
24	Dynamics of Populations of Integrate-and-Fire Neurons, Partial Synchronization and Memory. Neural Computation, 1993, 5, 570-586.	1.3	50
25	Visual Attention and Applications in Multimedia Technologies. Proceedings of the IEEE, 2013, 101, 2058-2067.	16.4	48
26	Synchrony: A Neural Correlate of Somatosensory Attention. Journal of Neurophysiology, 2007, 98, 1645-1661.	0.9	42
27	Optimization Methods for Spiking Neurons and Networks. IEEE Transactions on Neural Networks, 2010, 21, 1950-1962.	4.8	42
28	A simple model of mechanotransduction in primate glabrous skin. Journal of Neurophysiology, 2013, 109, 1350-1359.	0.9	42
29	Oscillator-phase coupling for different two-dimensional network connectivities. Physical Review A, 1991, 44, 6895-6904.	1.0	41
30	Evaluating variable resolution displays with visual search. , 2000, , .		38
31	A switched capacitor implementation of the generalized linear integrate-and-fire neuron. , 2009, , .		38
32	Design Principles of Columnar Organization in Visual Cortex. Neural Computation, 1994, 6, 602-614.	1.3	33
33	Research, robots, and reality: A statement on current trends in biorobotics. Behavioral and Brain Sciences, 2001, 24, 1072-1073.	0.4	30
34	A log-domain implementation of the Mihalas-Niebur neuron model. , 2010, , .		29
35	Generation of Synthetic Spike Trains with Defined Pairwise Correlations. Neural Computation, 2007, 19, 1720-1738.	1.3	28
36	Electrophysiological correlates of synchronous neural activity and attention: a short review. BioSystems, 2002, 67, 157-166.	0.9	27

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37	A proto-object based saliency model in three-dimensional space. Vision Research, 2016, 119, 42-49.	0.7	25
38	Suppressing epileptic activity in a neural mass model using a closed-loop proportional-integral controller. Scientific Reports, 2016, 6, 27344.	1.6	25
39	The formation of preference in risky choice. PLoS Computational Biology, 2019, 15, e1007201.	1.5	23
40	Risk-taking bias in human decision-making is encoded via a rightâ€"left brain pushâ€"pull system. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 1404-1413.	3.3	22
41	Estimating Parameters of Generalized Integrate-and-Fire Neurons from the Maximum Likelihood of Spike Trains. Neural Computation, 2011, 23, 2833-2867.	1.3	21
42	Spike synchrony generated by modulatory common input through NMDA-type synapses. Journal of Neurophysiology, 2016, 116, 1418-1433.	0.9	21
43	Neuronal cable theory. Scholarpedia Journal, 2008, 3, 2674.	0.3	21
44	The Effects of Input Rate and Synchrony on a Coincidence Detector: Analytical Solution. Neural Computation, 2003, 15, 539-547.	1.3	19
45	Mechanisms underlying the influence of saliency on value-based decisions. Journal of Vision, 2013, 13, 18-18.	0.1	18
46	Head movements during visual exploration of natural images in virtual reality. , 2017, , .		18
47	A feasibility test for perceptually adaptive level of detail rendering on desktop systems. , 2004, , .		17
48	Temporal Correlation Mechanisms and Their Role in Feature Selection: A Single-Unit Study in Primate Somatosensory Cortex. PLoS Biology, 2014, 12, e1002004.	2.6	17
49	A NOVEL METHOD FOR VISUALIZING FUNCTIONAL CONNECTIVITY USING PRINCIPAL COMPONENT ANALYSIS. International Journal of Neuroscience, 2006, 116, 419-429.	0.8	14
50	A recurrent neural model for proto-object based contour integration and figure-ground segregation. Journal of Computational Neuroscience, 2017, 43, 227-242.	0.6	14
51	Standing out in a small crowd: The role of display size in attracting attention. Visual Cognition, 2021, 29, 587-591.	0.9	14
52	Electrical properties of cell membranes. Scholarpedia Journal, 2008, 3, 7166.	0.3	14
53	Improved Integral Equation Solution for the First Passage Time of Leaky Integrate-and-Fire Neurons. Neural Computation, 2011, 23, 421-434.	1.3	12
54	Local spectral anisotropy is a valid cue for figureâ€"ground organization in natural scenes. Vision Research, 2014, 103, 116-126.	0.7	12

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55	Locally Contractive Dynamics in Generalized Integrate-and-Fire Neurons. SIAM Journal on Applied Dynamical Systems, 2013, 12, 1474-1514.	0.7	11
56	Audio-visual saliency map: Overview, basic models and hardware implementation. , 2013, , .		10
57	How is motion integrated into a proto-object based visual saliency model?. , 2015, , .		10
58	Unique objects attract attention even when faint. Vision Research, 2019, 160, 60-71.	0.7	10
59	Cortical column design: a link between the maps of preferred orientation and orientation tuning strength?. Biological Cybernetics, 1993, 70, 1-13.	0.6	9
60	Proto-object based visual saliency model with a motion-sensitive channel. , 2013, , .		9
61	Synaptic Depression Leads to Nonmonotonic Frequency Dependence in the Coincidence Detector. Neural Computation, 2003, 15, 2339-2358.	1.3	8
62	Rate and Synchrony in Feedforward Networks of Coincidence Detectors: Analytical Solution. Neural Computation, 2005, 17, 881-902.	1.3	8
63	The Edge of Stability: Response Times and Delta Oscillations in Balanced Networks. PLoS Computational Biology, 2016, 12, e1005121.	1.5	8
64	Figure-Ground Organization in Natural Scenes: Performance of a Recurrent Neural Model Compared with Neurons of Area V2. ENeuro, 2019, 6, ENEURO.0479-18.2019.	0.9	8
65	Neuromorphic visual saliency implementation using stochastic computation. , 2017, , .		7
66	Analytically determining frequency and amplitude of spontaneous alpha oscillation in JansenÊ¼s neural mass model using the describing function method. Chinese Physics B, 2018, 27, 048701.	0.7	7
67	Proto-object based saliency for event-driven cameras. , 2019, , .		7
68	Proto-Object Based Saliency Model With Texture Detection Channel. Frontiers in Computational Neuroscience, 2020, 14, 541581.	1.2	7
69	A Neuromorphic Proto-Object Based Dynamic Visual Saliency Model With a Hybrid FPGA Implementation. IEEE Transactions on Biomedical Circuits and Systems, 2021, 15, 580-594.	2.7	7
70	Generation of Direction Selectivity by Isotropic Intracortical Connections. Neural Computation, 1992, 4, 332-340.	1.3	6
71	Correlated Inhibitory and Excitatory Inputs to the Coincidence Detector: Analytical Solution. IEEE Transactions on Neural Networks, 2004, 15, 957-962.	4.8	6
72	Medial axis generation in a model of perceptual organization. , 2012, , .		6

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73	Computing 3D saliency from a 2D image. , 2013, , .		6
74	Short-term depression and transient memory in sensory cortex. Journal of Computational Neuroscience, 2017, 43, 273-294.	0.6	6
75	Stimulus-Driven Guidance of Visual Attention in Natural Scenes. , 2005, , 240-245.		6
76	Event-driven proto-object based saliency in 3D space to attract a robotâ€™s attention. Scientific Reports, 2022, 12, 7645.	1.6	6
77	Exact Solutions for Rate and Synchrony in Recurrent Networks of Coincidence Detectors. Neural Computation, 2008, 20, 2637-2661.	1.3	4
78	Extremal edges: Evidence in natural images. , 2011, , .		4
79	Attentive pointing in natural scenes correlates with other measures of attention. Vision Research, 2017, 135, 54-64.	0.7	4
80	Computational stereo-vision model of proto-object based saliency in three-dimensional space. , 2018, , .		4
81	Parameter Estimation of a Spiking Silicon Neuron. IEEE Transactions on Biomedical Circuits and Systems, 2012, 6, 133-141.	2.7	3
82	A neural model for perceptual organization of 3D surfaces. , 2015, , .		3
83	Proto-Object Based Saliency Model with Second-Order Texture Feature. , 2018, , .		3
84	Live Demonstration: Real-Time Implementation of Proto-Object Based Visual Saliency Model. , 2019, , .		3
85	Analysis of spiking synchrony in visual cortex reveals distinct types of top-down modulation signals for spatial and object-based attention. PLoS Computational Biology, 2021, 17, e1008829.	1.5	3
86	Mechanisms of perceptual organization provide auto-zoom and auto-localization for attention to objects. Journal of Vision, 2010, 10, 979-979.	0.1	3
87	Sensorimotor contingencies do not replace internal representations, and mastery is not necessary for perception. Behavioral and Brain Sciences, 2001, 24, 994-995.	0.4	2
88	Event-related simulation of neural processing in complex visual scenes. , 2011, , .		2
89	Closed form jitter methods for neuronal spike train analysis. , 2015, , .		2
90	Modeling Attention-Induced Reduction of Spike Synchrony in the Visual Cortex. Lecture Notes in Computer Science, 2016, , 359-366.	1.0	2

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91	Head movements are correlated with other measures of visual attention at smaller spatial scales. , 2018, , .		2
92	Naturalistic Spike Trains Drive State-Dependent Homeostatic Plasticity in Superficial Layers of Visual Cortex. Frontiers in Synaptic Neuroscience, 2021, 13, 663282.	1.3	2
93	Phase transitions in multiplicative competitive processes. Physical Review E, 2005, 72, 011912.	0.8	1
94	Figure-ground classification based on spectral properties of boundary image patches. , 2012, , .		1
95	Neuronal common input strength is unidentifiable from average firing rates and synchrony. , 2015, , .		1
96	Correlated Multiplicative Modulation in Coupled Oscillator Systems: A Model of Selective Attention. Progress of Theoretical Physics Supplement, 2006, 161, 336-339.	0.2	0
97	Temporal tagging of attended objects. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 2479-2480.	3.3	0
98	A network model of multiplicative attentional modulation. , 2012, , .		0
99	The role of horizontal connections for the modulation of border-ownership selective neurons in visual cortex. BMC Neuroscience, 2015, 16, .	0.8	0
100	Audio-Visual beamforming with the Eigenmike microphone array an omni-camera and cognitive auditory features. , 2017, , .		0
101	Figure-ground representation in deep neural networks. , 2019, , .		0