# Ernst Niebur

List of Publications by Year
in descending order



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|---|---|---|---|
| 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 | Event-driven proto-object based saliency in 3D space to attract a robotâ€™s attention. Scientific Reports, 2022, 12, 7645. | 1.6 | 6 |
| 2 | 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 |
| 3 | Naturalistic Spike Trains Drive State-Dependent Homeostatic Plasticity in Superficial Layers of Visual Cortex. Frontiers in Synaptic Neuroscience, 2021, 13, 663282. | 1.3 | 2 |
| 4 | 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 |
| 5 | Standing out in a small crowd: The role of display size in attracting attention. Visual Cognition, 2021, 29, 587-591. | 0.9 | 14 |
| 6 | Proto-Object Based Saliency Model With Texture Detection Channel. Frontiers in Computational Neuroscience, 2020, 14, 541581. | 1.2 | 7 |
| 7 | The formation of preference in risky choice. PLoS Computational Biology, 2019, 15, e1007201. | 1.5 | 23 |
| 8 | Live Demonstration: Real-Time Implementation of Proto-Object Based Visual Saliency Model. , 2019, , . | | 3 |
| 9 | Unique objects attract attention even when faint. Vision Research, 2019, 160, 60-71. | 0.7 | 10 |
| 10 | Figure-ground representation in deep neural networks. , 2019, , . | | 0 |
| 11 | Proto-object based saliency for event-driven cameras. , 2019, , . | | 7 |
| 12 | 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 |
| 13 | 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 |
| 14 | 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 |
| 15 | Computational stereo-vision model of proto-object based saliency in three-dimensional space. , 2018, , . | | 4 |
| 16 | Proto-Object Based Saliency Model with Second-Order Texture Feature. , 2018, , . | | 3 |
| 17 | Head movements are correlated with other measures of visual attention at smaller spatial scales. , 2018, , . | | 2 |
| 18 | Audio-Visual beamforming with the Eigenmike microphone array an omni-camera and cognitive auditory features. , 2017, , . | | 0 |

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|---|---|---|---|
| 19 | Attentive pointing in natural scenes correlates with other measures of attention. Vision Research, 2017, 135, 54-64. | 0.7 | 4 |
| 20 | Head movements during visual exploration of natural images in virtual reality. , 2017, , . | | 18 |
| 21 | Short-term depression and transient memory in sensory cortex. Journal of Computational Neuroscience, 2017, 43, 273-294. | 0.6 | 6 |
| 22 | 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 |
| 23 | Neuromorphic visual saliency implementation using stochastic computation. , 2017, , . | | 7 |
| 24 | Spike synchrony generated by modulatory common input through NMDA-type synapses. Journal of Neurophysiology, 2016, 116, 1418-1433. | 0.9 | 21 |
| 25 | Neural mechanisms of selective attention in the somatosensory system. Journal of Neurophysiology, 2016, 116, 1218-1231. | 0.9 | 57 |
| 26 | Modeling Attention-Induced Reduction of Spike Synchrony in the Visual Cortex. Lecture Notes in Computer Science, 2016, , 359-366. | 1.0 | 2 |
| 27 | A proto-object based saliency model in three-dimensional space. Vision Research, 2016, 119, 42-49. | 0.7 | 25 |
| 28 | Suppressing epileptic activity in a neural mass model using a closed-loop proportional-integral controller. Scientific Reports, 2016, 6, 27344. | 1.6 | 25 |
| 29 | The Edge of Stability: Response Times and Delta Oscillations in Balanced Networks. PLoS Computational Biology, 2016, 12, e1005121. | 1.5 | 8 |
| 30 | The role of horizontal connections for the modulation of border-ownership selective neurons in visual cortex. BMC Neuroscience, 2015, 16, . | 0.8 | 0 |
| 31 | A neural model for perceptual organization of 3D surfaces. , 2015, , . | | 3 |
| 32 | Neuronal common input strength is unidentifiable from average firing rates and synchrony. , 2015, , . | | 1 |
| 33 | Closed form jitter methods for neuronal spike train analysis. , 2015, , . | | 2 |
| 34 | How is motion integrated into a proto-object based visual saliency model?. , 2015, , . | | 10 |
| 35 | 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 |
| 36 | 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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|---|---|---|---|
| 37 | A model of proto-object based saliency. Vision Research, 2014, 94, 1-15. | 0.7 | 84 |
| 38 | Visual Attention and Applications in Multimedia Technologies. Proceedings of the IEEE, 2013, 101, 2058-2067. | 16.4 | 48 |
| 39 | Computing 3D saliency from a 2D image. , 2013, , . | | 6 |
| 40 | Proto-object based visual saliency model with a motion-sensitive channel. , 2013, , . | | 9 |
| 41 | A simple model of mechanotransduction in primate glabrous skin. Journal of Neurophysiology, 2013, 109, 1350-1359. | 0.9 | 42 |
| 42 | Mechanisms underlying the influence of saliency on value-based decisions. Journal of Vision, 2013, 13, 18-18. | 0.1 | 18 |
| 43 | Audio-visual saliency map: Overview, basic models and hardware implementation. , 2013, , . | | 10 |
| 44 | Locally Contractive Dynamics in Generalized Integrate-and-Fire Neurons. SIAM Journal on Applied Dynamical Systems, 2013, 12, 1474-1514. | 0.7 | 11 |
| 45 | Medial axis generation in a model of perceptual organization. , 2012, , . | | 6 |
| 46 | Figure-ground classification based on spectral properties of boundary image patches. , 2012, , . | | 1 |
| 47 | A network model of multiplicative attentional modulation. , 2012, , . | | 0 |
| 48 | Parameter Estimation of a Spiking Silicon Neuron. IEEE Transactions on Biomedical Circuits and Systems, 2012, 6, 133-141. | 2.7 | 3 |
| 49 | Event-related simulation of neural processing in complex visual scenes. , 2011, , . | | 2 |
| 50 | Extremal edges: Evidence in natural images. , 2011, , . | | 4 |
| 51 | Improved Integral Equation Solution for the First Passage Time of Leaky Integrate-and-Fire Neurons. Neural Computation, 2011, 23, 421-434. | 1.3 | 12 |
| 52 | Estimating Parameters of Generalized Integrate-and-Fire Neurons from the Maximum Likelihood of Spike Trains. Neural Computation, 2011, 23, 2833-2867. | 1.3 | 21 |
| 53 | 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 |
| 54 | Self-organized criticality occurs in non-conservative neuronal networks during â€˜upâ€™ states. Nature Physics, 2010, 6, 801-805. | 6.5 | 158 |

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|---|---|---|---|
| 55 | A log-domain implementation of the Mihalas-Niebur neuron model. , 2010, , . | | 29 |
| 56 | Optimization Methods for Spiking Neurons and Networks. IEEE Transactions on Neural Networks, 2010, 21, 1950-1962. | 4.8 | 42 |
| 57 | Mechanisms of perceptual organization provide auto-zoom and auto-localization for attention to objects. Journal of Vision, 2010, 10, 979-979. | 0.1 | 3 |
| 58 | Everyone knows what is interesting: Salient locations which should be fixated. Journal of Vision, 2009, 9, 25-25. | 0.1 | 64 |
| 59 | A switched capacitor implementation of the generalized linear integrate-and-fire neuron. , 2009, , . | | 38 |
| 60 | 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 |
| 61 | A Generalized Linear Integrate-and-Fire Neural Model Produces Diverse Spiking Behaviors. Neural Computation, 2009, 21, 704-718. | 1.3 | 142 |
| 62 | 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 |
| 63 | High-frequency gamma activity (80â€“150Hz) is increased in human cortex during selective attention. Clinical Neurophysiology, 2008, 119, 116-133. | 0.7 | 201 |
| 64 | 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 |
| 65 | A Model for Neuronal Competition During Development. Science, 2008, 320, 369-373. | 6.0 | 168 |
| 66 | Exact Solutions for Rate and Synchrony in Recurrent Networks of Coincidence Detectors. Neural Computation, 2008, 20, 2637-2661. | 1.3 | 4 |
| 67 | Synchrony and the binding problem in macaque visual cortex. Journal of Vision, 2008, 8, 30. | 0.1 | 56 |
| 68 | Neuronal cable theory. Scholarpedia Journal, 2008, 3, 2674. | 0.3 | 21 |
| 69 | Electrical properties of cell membranes. Scholarpedia Journal, 2008, 3, 7166. | 0.3 | 14 |
| 70 | Generation of Synthetic Spike Trains with Defined Pairwise Correlations. Neural Computation, 2007, 19, 1720-1738. | 1.3 | 28 |
| 71 | Synchrony: A Neural Correlate of Somatosensory Attention. Journal of Neurophysiology, 2007, 98, 1645-1661. | 0.9 | 42 |
| 72 | A Neural Model of Figureâ€“Ground Organization. Journal of Neurophysiology, 2007, 97, 4310-4326. | 0.9 | 231 |

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|---|---|---|---|
| 73 | A NOVEL METHOD FOR VISUALIZING FUNCTIONAL CONNECTIVITY USING PRINCIPAL COMPONENT ANALYSIS. International Journal of Neuroscience, 2006, 116, 419-429. | 0.8 | 14 |
| 74 | Correlated Multiplicative Modulation in Coupled Oscillator Systems: A Model of Selective Attention. Progress of Theoretical Physics Supplement, 2006, 161, 336-339. | 0.2 | 0 |
| 75 | Rate and Synchrony in Feedforward Networks of Coincidence Detectors: Analytical Solution. Neural Computation, 2005, 17, 881-902. | 1.3 | 8 |
| 76 | Phase transitions in multiplicative competitive processes. Physical Review E, 2005, 72, 011912. | 0.8 | 1 |
| 77 | Stimulus-Driven Guidance of Visual Attention in Natural Scenes. , 2005, , 240-245. | | 6 |
| 78 | A feasibility test for perceptually adaptive level of detail rendering on desktop systems. , 2004, , . | | 17 |
| 79 | Texture contrast attracts overt visual attention in natural scenes. European Journal of Neuroscience, 2004, 19, 783-789. | 1.2 | 88 |
| 80 | Correlated Inhibitory and Excitatory Inputs to the Coincidence Detector: Analytical Solution. IEEE Transactions on Neural Networks, 2004, 15, 957-962. | 4.8 | 6 |
| 81 | Synaptic Depression Leads to Nonmonotonic Frequency Dependence in the Coincidence Detector. Neural Computation, 2003, 15, 2339-2358. | 1.3 | 8 |
| 82 | The Effects of Input Rate and Synchrony on a Coincidence Detector: Analytical Solution. Neural Computation, 2003, 15, 539-547. | 1.3 | 19 |
| 83 | Scene content selected by active vision. Spatial Vision, 2003, 16, 125-154. | 1.4 | 261 |
| 84 | Variable-Resolution Displays: A Theoretical, Practical, and Behavioral Evaluation. Human Factors, 2002, 44, 611-629. | 2.1 | 57 |
| 85 | Modeling the role of salience in the allocation of overt visual attention. Vision Research, 2002, 42, 107-123. | 0.7 | 1,158 |
| 86 | Synchrony: a neuronal mechanism for attentional selection?. Current Opinion in Neurobiology, 2002, 12, 190-194. | 2.0 | 139 |
| 87 | Electrophysiological correlates of synchronous neural activity and attention: a short review. BioSystems, 2002, 67, 157-166. | 0.9 | 27 |
| 88 | Research, robots, and reality: A statement on current trends in biorobotics. Behavioral and Brain Sciences, 2001, 24, 1072-1073. | 0.4 | 30 |
| 89 | 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 |
| 90 | Evaluating variable resolution displays with visual search. , 2000, , . | | 38 |

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|---|---|---|---|
| 91 | 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 |
| 92 | Design Principles of Columnar Organization in Visual Cortex. Neural Computation, 1994, 6, 602-614. | 1.3 | 33 |
| 93 | 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 |
| 94 | Cortical column design: a link between the maps of preferred orientation and orientation tuning strength?. Biological Cybernetics, 1993, 70, 1-13. | 0.6 | 9 |
| 95 | Theory of the locomotion of nematodes: Control of the somatic motor neurons by interneurons. Mathematical Biosciences, 1993, 118, 51-82. | 0.9 | 56 |
| 96 | An oscillation-based model for the neuronal basis of attention. Vision Research, 1993, 33, 2789-2802. | 0.7 | 149 |
| 97 | Dynamics of Populations of Integrate-and-Fire Neurons, Partial Synchronization and Memory. Neural Computation, 1993, 5, 570-586. | 1.3 | 50 |
| 98 | Generation of Direction Selectivity by Isotropic Intracortical Connections. Neural Computation, 1992, 4, 332-340. | 1.3 | 6 |
| 99 | Theory of the locomotion of nematodes. Biophysical Journal, 1991, 60, 1132-1146. | 0.2 | 120 |
| 100 | Collective frequencies and metastability in networks of limit-cycle oscillators with time delay. Physical Review Letters, 1991, 67, 2753-2756. | 2.9 | 195 |
| 101 | Oscillator-phase coupling for different two-dimensional network connectivities. Physical Review A, 1991, 44, 6895-6904. | 1.0 | 41 |