Laurent U Perrinet

List of Publications by Year
in descending order

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90
papers

2,008
citations

331670

21
h-index

276875

41
g-index

107
all docs

107
docs citations

107
times ranked

1918
citing authors

#	ARTICLE	IF	CITATIONS
1	PyNN: a common interface for neuronal network simulators. Frontiers in Neuroinformatics, 2008, 2, 11.	2.5	409
2	Perceptions as Hypotheses: Saccades as Experiments. Frontiers in Psychology, 2012, 3, 151.	2.1	290
3	Self-Invertible 2D Log-Gabor Wavelets. International Journal of Computer Vision, 2007, 75, 231-246.	15.6	136
4	Networks of integrate-and-fire neurons using Rank Order Coding B: Spike timing dependent plasticity and emergence of orientation selectivity. Neurocomputing, 2001, 38-40, 539-545.	5.9	86
5	Smooth Pursuit and Visual Occlusion: Active Inference and Oculomotor Control in Schizophrenia. PLoS ONE, 2012, 7, e47502.	2.5	78
6	Functional consequences of correlated excitatory and inhibitory conductances in cortical networks. Journal of Computational Neuroscience, 2010, 28, 579-594.	1.0	71
7	More is not always better: adaptive gain control explains dissociation between perception and action. Nature Neuroscience, 2012, 15, 1596-1603.	14.8	60
8	The behavioral receptive field underlying motion integration for primate tracking eye movements. Neuroscience and Biobehavioral Reviews, 2012, 36, 1-25.	6.1	51
9	Coding Static Natural Images Using Spiking Event Times: Do Neurons Cooperate?. IEEE Transactions on Neural Networks, 2004, 15, 1164-1175.	4.2	49
10	Active inference, eye movements and oculomotor delays. Biological Cybernetics, 2014, 108, 777-801.	1.3	44
11	Bayesian modeling of dynamic motion integration. Journal of Physiology (Paris), 2007, 101, 64-77.	2.1	42
12	The Flash-Lag Effect as a Motion-Based Predictive Shift. PLoS Computational Biology, 2017, 13, e1005068.	3.2	40
13	Complex dynamics in recurrent cortical networks based on spatially realistic connectivities. Frontiers in Computational Neuroscience, 2012, 6, 41.	2.1	37
14	Suppressive Traveling Waves Shape Representations of Illusory Motion in Primary Visual Cortex of Awake Primate. Journal of Neuroscience, 2019, 39, 4282-4298.	3.6	36
15	Role of Homeostasis in Learning Sparse Representations. Neural Computation, 2010, 22, 1812-1836.	2.2	35
16	Push-Pull Receptive Field Organization and Synaptic Depression: Mechanisms for Reliably Encoding Naturalistic Stimuli in V1. Frontiers in Neural Circuits, 2016, 10, 37.	2.8	35
17	Sparse spike coding in an asynchronous feed-forward multi-layer neural network using matching pursuit. Neurocomputing, 2004, 57, 125-134.	5.9	32
18	Motion clouds: model-based stimulus synthesis of natural-like random textures for the study of motion perception. Journal of Neurophysiology, 2012, 107, 3217-3226.	1.8	32

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19	Dynamics of distributed 1D and 2D motion representations for short-latency ocular following. Vision Research, 2008, 48, 501-522.	1.4	30
20	Edge co-occurrences can account for rapid categorization of natural versus animal images. Scientific Reports, 2015, 5, 11400.	3.3	25
21	Motion-based prediction explains the role of tracking in motion extrapolation. Journal of Physiology (Paris), 2013, 107, 409-420.	2.1	23
22	Networks of integrate-and-fire neuron using rank order coding A: How to implement spike time dependent Hebbian plasticity. Neurocomputing, 2001, 38-40, 817-822.	5.9	22
23	Pursuing motion illusions: A realistic oculomotor framework for Bayesian inference. Vision Research, 2011, 51, 867-880.	1.4	22
24	Saccadic Foveation of a Moving Visual Target in the Rhesus Monkey. Journal of Neurophysiology, 2011, 105, 883-895.	1.8	20
25	Motion-Based Prediction Is Sufficient to Solve the Aperture Problem. Neural Computation, 2012, 24, 2726-2750.	2.2	19
26	Eye tracking a self-moved target with complex hand-target dynamics. Journal of Neurophysiology, 2016, 116, 1859-1870.	1.8	17
27	Sparse deep predictive coding captures contour integration capabilities of the early visual system. PLoS Computational Biology, 2021, 17, e1008629.	3.2	16
28	Reinforcement effects in anticipatory smooth eye movements. Journal of Vision, 2018, 18, 14.	0.3	15
29	Anisotropic connectivity implements motion-based prediction in a spiking neural network. Frontiers in Computational Neuroscience, 2013, 7, 112.	2.1	13
30	Sparse Approximation of Images Inspired from the Functional Architecture of the Primary Visual Areas. Eurasip Journal on Advances in Signal Processing, 2006, 2007, 1.	1.7	12
31	Revisiting horizontal connectivity rules in V1: from like-to-like towards like-to-all. Brain Structure and Function, 2022, 227, 1279-1295.	2.3	12
32	Feature detection using spikes: The greedy approach. Journal of Physiology (Paris), 2004, 98, 530-539.	2.1	11
33	Phase space analysis of networks based on biologically realistic parameters. Journal of Physiology (Paris), 2010, 104, 51-60.	2.1	11
34	Speed-Selectivity in Retinal Ganglion Cells is Sharpened by Broad Spatial Frequency, Naturalistic Stimuli. Scientific Reports, 2019, 9, 456.	3.3	11
35	Modeling spatial integration in the ocular following response using a probabilistic framework. Journal of Physiology (Paris), 2007, 101, 46-55.	2.1	10
36	Humans adapt their anticipatory eye movements to the volatility of visual motion properties. PLoS Computational Biology, 2020, 16, e1007438.	3.2	10

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37	Effect of Top-Down Connections in Hierarchical Sparse Coding. Neural Computation, 2020, 32, 2279-2309.	2.2	10
38	Testing the odds of inherent vs. observed overdispersion in neural spike counts. Journal of Neurophysiology, 2016, 115, 434-444.	1.8	9
39	Finding independent components using spikes: A natural result of hebbian learning in a sparse spike coding scheme. Natural Computing, 2004, 3, 159-175.	3.0	8
40	A dual foveal-peripheral visual processing model implements efficient saccade selection. Journal of Vision, 2020, 20, 22.	0.3	8
41	PyNN: towards a universal neural simulator API in Python. BMC Neuroscience, 2007, 8, .	1.9	7
42	A novel bio-inspired static image compression scheme for noisy data transmission over low-bandwidth channels. , 2010, , .		6
43	Sparse spike coding : applications of neuroscience to the processing of natural images. Proceedings of SPIE, 2008, , .	0.8	5
44	Bayesian Modeling of Motion Perception Using Dynamical Stochastic Textures. Neural Computation, 2018, 30, 3355-3392.	2.2	5
45	An Adaptive Homeostatic Algorithm for the Unsupervised Learning of Visual Features. Vision (Switzerland), 2019, 3, 47.	1.2	5
46	Visual Search as Active Inference. Communications in Computer and Information Science, 2020, , 165-178.	0.5	5
47	Emergence of filters from natural scenes in a sparse spike coding scheme. Neurocomputing, 2004, 58-60, 821-826.	5.9	4
48	Dynamical neural networks: Modeling low-level vision at short latencies. European Physical Journal: Special Topics, 2007, 142, 163-225.	2.6	4
49	A homeostatic gain control mechanism to improve event-driven object recognition. , 2021, , .		4
50	Coherence detection in a spiking neuron via Hebbian learning. Neurocomputing, 2002, 44-46, 133-139.	5.9	3
51	Sparse Gabor wavelets by local operations. , 2005, , .		3
52	Signature of an anticipatory response in area VI as modeled by a probabilistic model and a spiking neural network. , 2014, , .		3
53	M²APix: A Bio-Inspired Auto-Adaptive Visual Sensor for Robust Ground Height Estimation. , 2018, , .		3
54	NeuralEnsemble.Org: Unifying neural simulators in Python to ease the model complexity bottleneck. Frontiers in Neuroinformatics, 0, 3, .	2.5	3

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55	On efficient sparse spike coding schemes for learning natural scenes in the primary visual cortex. BMC Neuroscience, 2007, 8, .	1.9	2
56	Control of the temporal interplay between excitation and inhibition by the statistics of visual input. BMC Neuroscience, 2009, 10, .	1.9	2
57	Computational neuroscience, from multiple levels to multi-level. Journal of Physiology (Paris), 2010, 104, 1-4.	2.1	2
58	Speed uncertainty and motion perception with naturalistic random textures. Journal of Vision, 2018, 18, 345.	0.3	2
59	Synchrony in thalamic inputs enhances propagation of activity through cortical layers. BMC Neuroscience, 2007, 8, .	1.9	1
60	Different pooling of motion information for perceptual speed discrimination and behavioral speed estimation. Journal of Vision, 2010, 10, 834-834.	0.3	1
61	A Behavioral Receptive Field for Ocular Following in Monkeys: Spatial Summation and Its Spatial Frequency Tuning. ENeuro, 2022, 9, ENEURO.0374-21.2022.	1.9	1
62	Dynamics of non-linear cortico-cortical interactions during motion integration in early visual cortex: a spiking neural network model of an optical imaging study in the awake monkey. BMC Neuroscience, 2009, 10, .	1.9	0
63	Decoding the population dynamics underlying ocular following response using a probabilistic framework. BMC Neuroscience, 2009, 10, .	1.9	0
64	Motion-based predictive coding is sufficient to solve the aperture problem. BMC Neuroscience, 2011, 12, .	1.9	0
65	The relationship between cortical network structure and the corresponding state space dynamics. BMC Neuroscience, 2011, 12, .	1.9	0
66	Active inference, eye movements and oculomotor delays. BMC Neuroscience, 2013, 14, .	1.9	0
67	Motion based prediction and development of response to an "on the way" stimulus. BMC Neuroscience, 2013, 14, .	1.9	0
68	Sparse coding of natural images using a prior on edge co-occurences. , 2015, , .		0
69	Biologically-inspired characterization of sparseness in natural images. , 2016, , .		0
70	Dynamical state spaces of cortical networks representing various horizontal connectivities. Frontiers in Systems Neuroscience, 0, 3, .	2.5	0
71	Decoding spatial information in population of neurons for the ocular following response. Frontiers in Neuroinformatics, 0, 3, .	2.5	0
72	A recurrent Bayesian model of dynamic motion integration for smooth pursuit. Journal of Vision, 2010, 10, 545-545.	0.3	0

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73	Variations of horizontal cortical network structures and their corresponding state space dynamics. Frontiers in Computational Neuroscience, 0, 5, .	2.1	0
74	Pattern discrimination for moving random textures: Richer stimuli are more difficult to recognize. Journal of Vision, 2011, 11, 749-749.	0.3	0
75	Effect of image statistics on fixational eye movements. Journal of Vision, 2012, 12, 1014-1014.	0.3	0
76	How and why do image frequency properties influence perceived speed?. Journal of Vision, 2013, 13, 354-354.	0.3	0
77	Different temporal integration for ocular following and speed perception. Journal of Vision, 2013, 13, 385-385.	0.3	0
78	Beyond simply faster and slower: exploring paradoxes in speed perception. Journal of Vision, 2014, 14, 491-491.	0.3	0
79	Edge co-occurrences are sufficient to categorize natural versus animal images. Journal of Vision, 2014, 14, 1310-1310.	0.3	0
80	Motion-based prediction model for flash lag effect. Journal of Vision, 2014, 14, 471-471.	0.3	0
81	The characteristics of microsaccadic eye movements varied with the change of strategy in a match-to-sample task.. Journal of Vision, 2014, 14, 110-110.	0.3	0
82	Anticipatory smooth eye movements and reinforcement. Journal of Vision, 2015, 15, 1019.	0.3	0
83	A dynamic model for decoding direction and orientation in macaque primary visual cortex. Journal of Vision, 2015, 15, 484.	0.3	0
84	Operant reinforcement versus reward expectancy: effects on anticipatory eye movements. Journal of Vision, 2016, 16, 1356.	0.3	0
85	Dynamic modulation of volatility by reward contingencies: effects on anticipatory smooth eye movement. Journal of Vision, 2017, 17, 273.	0.3	0
86	AB009. Learning dynamics in a neural network model of the primary visual cortex. Annals of Eye Science, 0, 4, AB009-AB009.	2.1	0
87	Humans adapt their anticipatory eye movements to the volatility of visual motion properties. , 2020, 16, e1007438.		0
88	Humans adapt their anticipatory eye movements to the volatility of visual motion properties. , 2020, 16, e1007438.		0
89	Humans adapt their anticipatory eye movements to the volatility of visual motion properties. , 2020, 16, e1007438.		0
90	Humans adapt their anticipatory eye movements to the volatility of visual motion properties. , 2020, 16, e1007438.		0