

# Laurenz Wiskott

## List of Publications by Year in descending order

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Version: 2024-02-01

80  
papers

6,218  
citations

185998

28  
h-index

106150

65  
g-index

86  
all docs

86  
docs citations

86  
times ranked

4341  
citing authors

#	ARTICLE	IF	CITATIONS
1	Face recognition by elastic bunch graph matching. IEEE Transactions on Pattern Analysis and Machine Intelligence, 1997, 19, 775-779.	9.7	2,408
2	Slow Feature Analysis: Unsupervised Learning of Invariances. Neural Computation, 2002, 14, 715-770.	1.3	926
3	Functional significance of adult neurogenesis. Current Opinion in Neurobiology, 2004, 14, 186-191.	2.0	576
4	Deep Hierarchies in the Primate Visual Cortex: What Can We Learn for Computer Vision?. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2013, 35, 1847-1871.	9.7	285
5	A functional hypothesis for adult hippocampal neurogenesis: Avoidance of catastrophic interference in the dentate gyrus. Hippocampus, 2006, 16, 329-343.	0.9	259
6	Slow feature analysis yields a rich repertoire of complex cell properties. Journal of Vision, 2005, 5, 9-9.	0.1	185
7	Slowness and Sparseness Lead to Place, Head-Direction, and Spatial-View Cells. PLoS Computational Biology, 2007, 3, e166.	1.5	153
8	Face recognition by elastic bunch graph matching. Lecture Notes in Computer Science, 1997, , 456-463.	1.0	74
9	Slowness: An Objective for Spike-Timing-Dependent Plasticity?. PLoS Computational Biology, 2007, 3, e112.	1.5	65
10	CuBICA: Independent Component Analysis by Simultaneous Third- and Fourth-Order Cumulant Diagonalization. IEEE Transactions on Signal Processing, 2004, 52, 1250-1256.	3.2	64
11	Modular toolkit for Data Processing (MDP): a Python data processing framework. Frontiers in Neuroinformatics, 2008, 2, 8.	1.3	62
12	What Is the Relation Between Slow Feature Analysis and Independent Component Analysis?. Neural Computation, 2006, 18, 2495-2508.	1.3	60
13	From grids to places. Journal of Computational Neuroscience, 2007, 22, 297-299.	0.6	59
14	Recognizing Faces by Dynamic Link Matching. NeuroImage, 1996, 4, S14-S18.	2.1	56
15	Slow Feature Analysis: A Theoretical Analysis of Optimal Free Responses. Neural Computation, 2003, 15, 2147-2177.	1.3	55
16	Spatial representations of place cells in darkness are supported by path integration and border information. Frontiers in Behavioral Neuroscience, 2014, 8, 222.	1.0	55
17	Reinforcement Learning on Slow Features of High-Dimensional Input Streams. PLoS Computational Biology, 2010, 6, e1000894.	1.5	53
18	A computational model for preplay in the hippocampus. Frontiers in Computational Neuroscience, 2013, 7, 161.	1.2	52

#	ARTICLE	IF	CITATIONS
19	Invariant Object Recognition and Pose Estimation with Slow Feature Analysis. <i>Neural Computation</i> , 2011, 23, 2289-2323.	1.3	46
20	Independent Slow Feature Analysis and Nonlinear Blind Source Separation. <i>Neural Computation</i> , 2007, 19, 994-1021.	1.3	45
21	Additive neurogenesis as a strategy for avoiding interference in a sparsely-coding dentate gyrus. <i>Network: Computation in Neural Systems</i> , 2009, 20, 137-161.	2.2	44
22	The Role of Additive Neurogenesis and Synaptic Plasticity in a Hippocampal Memory Model with Grid-Cell Like Input. <i>PLoS Computational Biology</i> , 2011, 7, e1001063.	1.5	41
23	Phantom faces for face analysis. <i>Pattern Recognition</i> , 1997, 30, 837-846.	5.1	40
24	A NEURAL SYSTEM FOR THE RECOGNITION OF PARTIALLY OCCLUDED OBJECTS IN CLUTTERED SCENES: A PILOT STUDY. <i>International Journal of Pattern Recognition and Artificial Intelligence</i> , 1993, 07, 935-948.	0.7	38
25	Slow feature analysis. <i>Scholarpedia Journal</i> , 2011, 6, 5282.	0.3	35
26	The role of topographical constraints in face recognition. <i>Pattern Recognition Letters</i> , 1999, 20, 89-96.	2.6	30
27	On the Analysis and Interpretation of Inhomogeneous Quadratic Forms as Receptive Fields. <i>Neural Computation</i> , 2006, 18, 1868-1895.	1.3	30
28	Constrained Optimization for Neural Map Formation: A Unifying Framework for Weight Growth and Normalization. <i>Neural Computation</i> , 1998, 10, 671-716.	1.3	29
29	Invariant Object Recognition with Slow Feature Analysis. <i>Lecture Notes in Computer Science</i> , 2008, , 961-970.	1.0	24
30	Segmentation from motion: combining Gabor- and Mallat-wavelets to overcome the aperture and correspondence problems. <i>Pattern Recognition</i> , 1999, 32, 1751-1766.	5.1	23
31	Memory Storage Fidelity in the Hippocampal Circuit: The Role of Subregions and Input Statistics. <i>PLoS Computational Biology</i> , 2015, 11, e1004250.	1.5	21
32	Gaussian-binary restricted Boltzmann machines for modeling natural image statistics. <i>PLoS ONE</i> , 2017, 12, e0171015.	1.1	20
33	The Photorefractive Effect in LiNbO <sub>3</sub> at High Light Intensity. <i>Physica Status Solidi A</i> , 1991, 128, K41-K46.	1.7	19
34	How Does Our Visual System Achieve Shift and Size Invariance?. , 2006, , 322-340.		19
35	Applying Slow Feature Analysis to Image Sequences Yields a Rich Repertoire of Complex Cell Properties. <i>Lecture Notes in Computer Science</i> , 2002, , 81-86.	1.0	15
36	Experience-Dependency of Reliance on Local Visual and Idiothetic Cues for Spatial Representations Created in the Absence of Distal Information. <i>Frontiers in Behavioral Neuroscience</i> , 2017, 11, 92.	1.0	14

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37	Context-dependent extinction learning emerging from raw sensory inputs: a reinforcement learning approach. <i>Scientific Reports</i> , 2021, 11, 2713.	1.6	13
38	Slow Feature Analysis: Perspectives for Technical Applications of a Versatile Learning Algorithm. <i>KI - Kunstliche Intelligenz</i> , 2012, 26, 341-348.	2.2	12
39	Multivariate Slow Feature Analysis and Decorrelation Filtering for Blind Source Separation. <i>IEEE Transactions on Image Processing</i> , 2013, 22, 2737-2750.	6.0	12
40	Predictable Feature Analysis. , 2015, , .		12
41	Learning invariance manifolds. <i>Neurocomputing</i> , 1999, 26-27, 925-932.	3.5	11
42	Slow Feature Analysis on Retinal Waves Leads to V1 Complex Cells. <i>PLoS Computational Biology</i> , 2014, 10, e1003564.	1.5	11
43	Modeling place field activity with hierarchical slow feature analysis. <i>Frontiers in Computational Neuroscience</i> , 2015, 9, 51.	1.2	11
44	Elastic Bunch Graph Matching. <i>Scholarpedia Journal</i> , 2014, 9, 10587.	0.3	11
45	Graph-based predictable feature analysis. <i>Machine Learning</i> , 2017, 106, 1359-1380.	3.4	10
46	The Interaction between Semantic Representation and Episodic Memory. <i>Neural Computation</i> , 2018, 30, 293-332.	1.3	10
47	RatLab: an easy to use tool for place code simulations. <i>Frontiers in Computational Neuroscience</i> , 2013, 7, 104.	1.2	9
48	Storage fidelity for sequence memory in the hippocampal circuit. <i>PLoS ONE</i> , 2018, 13, e0204685.	1.1	9
49	Phantom faces for face analysis. <i>Lecture Notes in Computer Science</i> , 1997, , 480-487.	1.0	9
50	Is slowness a learning principle of the visual cortex?. <i>Zoology</i> , 2003, 106, 373-382.	0.6	8
51	A Theory of Slow Feature Analysis for Transformation-Based Input Signals with an Application to Complex Cells. <i>Neural Computation</i> , 2011, 23, 303-335.	1.3	7
52	Analysis and interpretation of quadratic models of receptive fields. <i>Nature Protocols</i> , 2007, 2, 400-407.	5.5	6
53	Slowness as a Proxy for Temporal Predictability: An Empirical Comparison. <i>Neural Computation</i> , 2018, 30, 1151-1179.	1.3	5
54	Improved graph-based SFA: information preservation complements the slowness principle. <i>Machine Learning</i> , 2020, 109, 999-1037.	3.4	5

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55	Understanding Slow Feature Analysis: A Mathematical Framework. SSRN Electronic Journal, 0, , .	0.4	4
56	Building extensible frameworks for data processing: The case of MDP, Modular toolkit for Data Processing. Journal of Computational Science, 2013, 4, 345-351.	1.5	4
57	Learning Gradient-Based ICA by Neurally Estimating Mutual Information. Lecture Notes in Computer Science, 2019, , 182-187.	1.0	4
58	Heuristic Evaluation of Expansions for Non-linear Hierarchical Slow Feature Analysis. , 2011, , .		3
59	What is the Functional Role of New Neurons in the Adult Dentate Gyrus?. Research and Perspectives in Neurosciences, 2004, , 57-65.	0.4	3
60	Laplacian Matrix for Dimensionality Reduction and Clustering. Lecture Notes in Business Information Processing, 2020, , 93-119.	0.8	3
61	Objective functions for neural map formation. Lecture Notes in Computer Science, 1997, , 243-248.	1.0	2
62	Slow feature analysis and decorrelation filtering for separating correlated sources. , 2011, , .		2
63	An Improved Cumulant Based Method for Independent Component Analysis. Lecture Notes in Computer Science, 2002, , 1087-1093.	1.0	2
64	Segmentation from motion: Combining Gabor- and Mallat-wavelets to overcome aperture and correspondence problem. Lecture Notes in Computer Science, 1997, , 329-336.	1.0	2
65	Learning complex cell units from simulated prenatal retinal waves with slow feature analysis. BMC Neuroscience, 2009, 10, .	0.8	1
66	Improving sensory representations using episodic memory. Hippocampus, 2020, 30, 638-656.	0.9	1
67	An experimental multiprocessor system for distributed parallel computations. Microprocessing and Microprogramming, 1990, 26, 305-317.	0.3	0
68	Spike-timing-dependent plasticity and temporal input statistics. BMC Neuroscience, 2007, 8, .	0.8	0
69	Visualization of higher-level receptive fields in a hierarchical model of the visual system. BMC Neuroscience, 2009, 10, .	0.8	0
70	Quantitative modeling of the dynamics of adult hippocampal neurogenesis in mice. BMC Neuroscience, 2009, 10, .	0.8	0
71	Reinforcement learning on complex visual stimuli. BMC Neuroscience, 2009, 10, .	0.8	0
72	Cover Image, Volume 30, Issue 6. Hippocampus, 2020, 30, C1.	0.9	0

#	ARTICLE	IF	CITATIONS
73	Gender and Age Estimation from Synthetic Face Images. Lecture Notes in Computer Science, 2010, , 240-249.	1.0	0
74	Self-organization of V1 Complex Cells Based On Slow Feature Analysis And Retinal Waves. Frontiers in Computational Neuroscience, 0, 4, .	1.2	0
75	Hierarchical Slow Feature Analysis and Top-Down Processes. Frontiers in Computational Neuroscience, 0, 4, .	1.2	0
76	Slow Feature Analysis. , 2014, , 1-2.		0
77	Objekterkennung in einem selbstorganisierenden neuronalen System. , 1999, , 169-188.		0
78	Slow Feature Analysis. , 2015, , 2715-2717.		0
79	Latent Representation Prediction Networks. International Journal of Pattern Recognition and Artificial Intelligence, 2022, 36, .	0.7	0
80	Slow Feature Analysis. , 2022, , 3142-3143.		0