Christopher J Rozell

List of Publications by Year
in descending order

73 papers	1,853 citations	430874 18 h-index	302126 39 g-index
76 all docs	76 docs citations	76 times ranked	1984 citing authors

#	ARTICLE	IF	CITATIONS
1	Sparse Coding via Thresholding and Local Competition in Neural Circuits. Neural Computation, 2008, 20, 2526-2563.	2.2	362
2	All-Optical Nanoscale pH Meter. Nano Letters, 2006, 6, 1687-1692.	9.1	337
3	Learning Sparse Codes for Hyperspectral Imagery. IEEE Journal on Selected Topics in Signal Processing, 2011, 5, 963-978.	10.8	168
4	Visual Nonclassical Receptive Field Effects Emerge from Sparse Coding in a Dynamical System. PLoS Computational Biology, 2013, 9, e1003191.	3.2	75
5	Convergence and Rate Analysis of Neural Networks for Sparse Approximation. IEEE Transactions on Neural Networks and Learning Systems, 2012, 23, 1377-1389.	11.3	65
6	Sparsity penalties in dynamical system estimation. , 2011, , .		62
7	The restricted isometry property for random block diagonal matrices. Applied and Computational Harmonic Analysis, 2015, 38, 1-31.	2.2	42
8	OPTIMAL SPARSE APPROXIMATION WITH INTEGRATE AND FIRE NEURONS. International Journal of Neural Systems, 2014, 24, 1440001.	5.2	41
9	Dynamic Filtering of Time-Varying Sparse Signals via <inline-formula> <tex-math notation="LaTeX">$\ell _1$</tex-math> </inline-formula> Minimization. IEEE Transactions on Signal Processing, 2016, 64, 5644-5656.	5.3	41
10	Concentration of Measure for Block Diagonal Matrices With Applications to Compressive Signal Processing. IEEE Transactions on Signal Processing, 2011, 59, 5859-5875.	5.3	35
11	Modeling Inhibitory Interneurons in Efficient Sensory Coding Models. PLoS Computational Biology, 2015, 11, e1004353.	3.2	33
12	PatcherBot: a single-cell electrophysiology robot for adherent cells and brain slices. Journal of Neural Engineering, 2019, 16, 046003.	3.5	32
13	Spectral Superresolution of Hyperspectral Imagery Using Reweighted ℓ_{1} Spatial Filtering. IEEE Geoscience and Remote Sensing Letters, 2014, 11, 602-606.	3.1	28
14	Analyzing the robustness of redundant population codes in sensory and feature extraction systems. Neurocomputing, 2006, 69, 1215-1218.	5.9	26
15	Locally Competitive Algorithms for Sparse Approximation. , 2007, , .		26
16	Configurable hardware integrate and fire neurons for sparse approximation. Neural Networks, 2013, 45, 134-143.	5.9	26
17	Discrete and Continuous-Time Soft-Thresholding for Dynamic Signal Recovery. IEEE Transactions on Signal Processing, 2015, 63, 3165-3176.	5.3	26
18	Low Power Sparse Approximation on Reconfigurable Analog Hardware. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2012, 2, 530-541.	3.6	25

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19	Convergence Speed of a Dynamical System for Sparse Recovery. IEEE Transactions on Signal Processing, 2013, 61, 4259-4269.	5.3	24
20	The Restricted Isometry Property for block diagonal matrices. , 2011, , .		22
21	Short-Term Memory Capacity in Networks via the Restricted Isometry Property. Neural Computation, 2014, 26, 1198-1235.	2.2	22
22	A Common Network Architecture Efficiently Implements a Variety of Sparsity-Based Inference Problems. Neural Computation, 2012, 24, 3317-3339.	2.2	19
23	Evaluating the Generalization of the Hearing Aid Speech Quality Index (HASQI). IEEE Transactions on Audio Speech and Language Processing, 2013, 21, 407-415.	3.2	18
24	Electrical and Optical Activation of Mesoscale Neural Circuits with Implications for Coding. Journal of Neuroscience, 2015, 35, 15702-15715.	3.6	18
25	Stable Takens' Embeddings for Linear Dynamical Systems. IEEE Transactions on Signal Processing, 2011, 59, 4781-4794.	5.3	16
26	Estimation and dynamic updating of time-varying signals with sparse variations. , 2011, , .		16
27	Cell Membrane Tracking in Living Brain Tissue Using Differential Interference Contrast Microscopy. IEEE Transactions on Image Processing, 2018, 27, 1847-1861.	9.8	16
28	Sparse Bayesian Learning With Dynamic Filtering for Inference of Time-Varying Sparse Signals. IEEE Transactions on Signal Processing, 2020, 68, 388-403.	5.3	14
29	Towards Democratizing and Automating Online Conferences: Lessons from the Neuromatch Conferences. Trends in Cognitive Sciences, 2021, 25, 265-268.	7.8	13
30	Constrained brain volume in an efficient coding model explains the fraction of excitatory and inhibitory neurons in sensory cortices. PLoS Computational Biology, 2022, 18, e1009642.	3.2	13
31	Stabilizing embedology: Geometry-preserving delay-coordinate maps. Physical Review E, 2018, 97, 022222.	2.1	11
32	Dynamic filtering of sparse signals using reweighted &#x2113;<inf>1</inf>. , 2013, , .		10
33	An unbiased, efficient sleepâ€"wake detection algorithm for a population with sleep disorders: change point decoder. Sleep, 2020, 43, .	1.1	10
34	Concentration of measure for block diagonal measurement matrices. , 2010, , .		9
35	Sparse Coding Using the Locally Competitive Algorithm on the TrueNorth Neurosynaptic System. Frontiers in Neuroscience, 2019, 13, 754.	2.8	9
36	Measuring information transfer in the spike generator of crayfish sustaining fibers. Biological Cybernetics, 2004, 90, 89-97.	1.3	8

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37	Global convergence of the Locally Competitive Algorithm. , 2011, , .		8
38	Structure in time-frequency binary masking errors and its impact on speech intelligibility. Journal of the Acoustical Society of America, 2015, 137, 2025-2035.	1.1	8
39	Cochlear implant speech intelligibility outcomes with structured and unstructured binary mask errors. Journal of the Acoustical Society of America, 2016, 139, 800-810.	1.1	8
40	Sparse codes from memristor grids. Nature Nanotechnology, 2017, 12, 722-723.	31.5	8
41	Unbalanced Optimal Transport Regularization for Imaging Problems. IEEE Transactions on Computational Imaging, 2020, 6, 1219-1232.	4.4	8
42	Sparse coding for spectral signatures in hyperspectral images. , 2010, , .		6
43	Outcome measures based on classification performance fail to predict the intelligibility of binary-masked speech. Journal of the Acoustical Society of America, 2016, 139, 3033-3036.	1.1	6
44	Harnessing the Manifold Structure of Cardiomechanical Signals for Physiological Monitoring During Hemorrhage. IEEE Transactions on Biomedical Engineering, 2021, 68, 1759-1767.	4.2	6
45	A novel binary mask estimator based on sparse approximation. , 2013, , .		5
46	Efficient Tracking of Sparse Signals via an Earth Mover's Distance Dynamics Regularizer. IEEE Signal Processing Letters, 2020, 27, 1120-1124.	3.6	5
47	Convergence of a neural network for sparse approximation using the nonsmooth &#x0141;ojasiewicz inequality. , 2013, , .		4
48	Longitudinal Changes in Subcallosal Cingulate Local Field Potential Features in Patients Undergoing DBS for Treatment-Resistant Depression. Biological Psychiatry, 2020, 87, S193.	1.3	4
49	Analog sparse approximation for compressed sensing recovery. , 2010, , .		3
50	Concentration of measure for block diagonal matrices with repeated blocks. , 2010, , .		3
51	A scalable implementation of sparse approximation on a field programmable analog array. , 2011, , .		3
52	Stable manifold embeddings with operators satisfying the Restricted Isometry Property. , 2011, , .		3
53	The Restricted Isometry Property for Echo State Networks with applications to sequence memory capacity. , 2012, , .		3
54	Precision cell boundary tracking on DIC microscopy video for patch clamping. , 2017, , .		3

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55	Earth-Mover's distance as a tracking regularizer. , 2017, , .		3
56	Sparse Dynamic Filtering via Earth Mover's Distance Regularization. , 2018, , .		3
57	Infrared Search and Track With Unbalanced Optimal Transport Dynamics Regularization. IEEE Geoscience and Remote Sensing Letters, 2021, 18, 2072-2076.	3.1	3
58	Active Embedding Search via Noisy Paired Comparisons. , 2020, , .		3
59	Sparse coding models demonstrate some non-classical receptive field effects. BMC Neuroscience, 2010, 11, .	1.9	2
60	A causal Locally Competitive Algorithm for the sparse decomposition of audio signals. , 2011, , .		2
61	A 17.8-MS/s Compressed Sensing Radar Accelerator Using a Spiking Neural Network. IEEE Journal of Solid-State Circuits, 2021, 56, 834-843.	5.4	2
62	Stable Takens' Embedding for linear dynamical systems. , 2010, , .		1
63	Compressive LADAR in realistic environments. , 2012, , .		1
64	Biologically realistic excitatory and inhibitory cell properties emerge from a sparse coding network. BMC Neuroscience, 2012, 13, .	1.9	1
65	Joint Estimation of Trajectory and Dynamics from Paired Comparisons. , 2019, , .		1
66	Representing Closed Transformation Paths in Encoded Network Latent Space. Proceedings of the AAAI Conference on Artificial Intelligence, 2020, 34, 3666-3675.	4.9	1
67	Compressive ladar detector noise performance. , 2012, , .		0
68	Sparse coding model captures V1 population response statistics to natural movies. BMC Neuroscience, 2013, 14, P334.	1.9	0
69	Speech understanding in noise provided by a simulated cochlear implant processor based on matching pursuit. , 2013, , .		0
70	Iterative soft-thresholding for time-varying signal recovery. , 2014, , .		0
71	Dynamical System Implementations of Sparse Bayesian Learning. , 2019, , .		0
72	The Picasso Algorithm for Bayesian Localization Via Paired Comparisons in a Union of Subspaces Model. , 2020, , .		0

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73	Active Ordinal Querying for Tuplewise Similarity Learning. Proceedings of the AAAI Conference on Artificial Intelligence, 2020, 34, 3332-3340.	4.9	0