

Liam Paninski

List of Publications by Year in descending order

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112
papers

14,023
citations

36203

51
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30848

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135
all docs

135
docs citations

135
times ranked

10603
citing authors

#	ARTICLE	IF	CITATIONS
1	Reconstruction of neocortex: Organelles, compartments, cells, circuits, and activity. <i>Cell</i> , 2022, 185, 1082-1100.e24.	13.5	84
2	Blind demixing methods for recovering dense neuronal morphology from barcode imaging data. <i>PLoS Computational Biology</i> , 2022, 18, e1009991.	1.5	2
3	NeuroPAL: A Multicolor Atlas for Whole-Brain Neuronal Identification in <i>C.Âelegans</i> . <i>Cell</i> , 2021, 184, 272-288.e11.	13.5	132
4	BARcode DEmixing through Non-negative Spatial Regression (BarDensr). <i>PLoS Computational Biology</i> , 2021, 17, e1008256.	1.5	16
5	High-fidelity estimates of spikes and subthreshold waveforms from 1-photon voltage imaging inÂvivo. <i>Cell Reports</i> , 2021, 35, 108954.	2.9	24
6	Chronic, cortex-wide imaging of specific cell populations during behavior. <i>Nature Protocols</i> , 2021, 16, 3241-3263.	5.5	41
7	Visualizing the organization and differentiation of the male-specific nervous system of <i>C. elegans</i> . <i>Development (Cambridge)</i> , 2021, 148, .	1.2	7
8	Partitioning variability in animal behavioral videos using semi-supervised variational autoencoders. <i>PLoS Computational Biology</i> , 2021, 17, e1009439.	1.5	21
9	Non-parametric Vignetting Correction for Sparse Spatial Transcriptomics Images. <i>Lecture Notes in Computer Science</i> , 2021, 12908, 466-475.	1.0	2
10	Rapid mesoscale volumetric imaging of neural activity with synaptic resolution. <i>Nature Methods</i> , 2020, 17, 291-294.	9.0	99
11	Localized semi-nonnegative matrix factorization (LocaNMF) of widefield calcium imaging data. <i>PLoS Computational Biology</i> , 2020, 16, e1007791.	1.5	52
12	Demixing Calcium Imaging Data in <i>C. elegans</i> via Deformable Non-negative Matrix Factorization. <i>Lecture Notes in Computer Science</i> , 2020, , 14-24.	1.0	3
13	Localized semi-nonnegative matrix factorization (LocaNMF) of widefield calcium imaging data. , 2020, 16, e1007791.		0
14	Localized semi-nonnegative matrix factorization (LocaNMF) of widefield calcium imaging data. , 2020, 16, e1007791.		0
15	Localized semi-nonnegative matrix factorization (LocaNMF) of widefield calcium imaging data. , 2020, 16, e1007791.		0
16	Localized semi-nonnegative matrix factorization (LocaNMF) of widefield calcium imaging data. , 2020, 16, e1007791.		0
17	Bright and photostable chemigenetic indicators for extended in vivo voltage imaging. <i>Science</i> , 2019, 365, 699-704.	6.0	362
18	Voltage imaging and optogenetics reveal behaviour-dependent changes in hippocampal dynamics. <i>Nature</i> , 2019, 569, 413-417.	13.7	255

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19	Reinforcement Learning Recruits Somata and Apical Dendrites across Layers of Primary Sensory Cortex. <i>Cell Reports</i> , 2019, 26, 2000-2008.e2.	2.9	59
20	Complementary networks of cortical somatostatin interneurons enforce layer specific control. <i>ELife</i> , 2019, 8, .	2.8	89
21	A new method to analyze the variations of neural tuning and its application to primate V1. <i>Journal of Vision</i> , 2019, 19, 271b.	0.1	0
22	Anxiety Cells in a Hippocampal-Hypothalamic Circuit. <i>Neuron</i> , 2018, 97, 670-683.e6.	3.8	408
23	Efficient and accurate extraction of in vivo calcium signals from microendoscopic video data. <i>ELife</i> , 2018, 7, .	2.8	489
24	Community-based benchmarking improves spike rate inference from two-photon calcium imaging data. <i>PLoS Computational Biology</i> , 2018, 14, e1006157.	1.5	118
25	Cerebellar granule cells acquire a widespread predictive feedback signal during motor learning. <i>Nature Neuroscience</i> , 2017, 20, 727-734.	7.1	182
26	The central amygdala controls learning in the lateral amygdala. <i>Nature Neuroscience</i> , 2017, 20, 1680-1685.	7.1	159
27	The Spatiotemporal Organization of the Striatum Encodes Action Space. <i>Neuron</i> , 2017, 95, 1171-1180.e7.	3.8	192
28	Robust and scalable Bayesian analysis of spatial neural tuning function data. <i>Annals of Applied Statistics</i> , 2017, 11, .	0.5	1
29	Fast online deconvolution of calcium imaging data. <i>PLoS Computational Biology</i> , 2017, 13, e1005423.	1.5	407
30	Multi-scale approaches for high-speed imaging and analysis of large neural populations. <i>PLoS Computational Biology</i> , 2017, 13, e1005685.	1.5	35
31	Electrical stimulus artifact cancellation and neural spike detection on large multi-electrode arrays. <i>PLoS Computational Biology</i> , 2017, 13, e1005842.	1.5	44
32	Neuroprosthetic Decoder Training as Imitation Learning. <i>PLoS Computational Biology</i> , 2016, 12, e1004948.	1.5	8
33	Population-Level Representation of a Temporal Sequence Underlying Song Production in the Zebra Finch. <i>Neuron</i> , 2016, 90, 866-876.	3.8	109
34	Bayesian methods for event analysis of intracellular currents. <i>Journal of Neuroscience Methods</i> , 2016, 269, 21-32.	1.3	14
35	Bayesian Sparse Regression Analysis Documents the Diversity of Spinal Inhibitory Interneurons. <i>Cell</i> , 2016, 165, 220-233.	13.5	59
36	Simultaneous Multi-plane Imaging of Neural Circuits. <i>Neuron</i> , 2016, 89, 269-284.	3.8	209

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37	Simultaneous Denoising, Deconvolution, and Demixing of Calcium Imaging Data. <i>Neuron</i> , 2016, 89, 285-299.	3.8	843
38	Efficient "Shotgun" Inference of Neural Connectivity from Highly Sub-sampled Activity Data. <i>PLoS Computational Biology</i> , 2015, 11, e1004464.	1.5	39
39	Primacy of Flexor Locomotor Pattern Revealed by Ancestral Reversion of Motor Neuron Identity. <i>Cell</i> , 2015, 162, 338-350.	13.5	54
40	Encoder-Decoder Optimization for Brain-Computer Interfaces. <i>PLoS Computational Biology</i> , 2015, 11, e1004288.	1.5	23
41	Mapping nonlinear receptive field structure in primate retina at single cone resolution. <i>ELife</i> , 2015, 4, .	2.8	77
42	Exact Hamiltonian Monte Carlo for Truncated Multivariate Gaussians. <i>Journal of Computational and Graphical Statistics</i> , 2014, 23, 518-542.	0.9	96
43	On Quadrature Methods for Refractory Point Process Likelihoods. <i>Neural Computation</i> , 2014, 26, 2790-2797.	1.3	7
44	Fast inference in generalized linear models via expected log-likelihoods. <i>Journal of Computational Neuroscience</i> , 2014, 36, 215-234.	0.6	21
45	Fast state-space methods for inferring dendritic synaptic connectivity. <i>Journal of Computational Neuroscience</i> , 2014, 36, 415-443.	0.6	13
46	Fast Kalman Filtering and Forward-Backward Smoothing via a Low-Rank Perturbative Approach. <i>Journal of Computational and Graphical Statistics</i> , 2014, 23, 316-339.	0.9	21
47	Spatiotemporal receptive fields of barrel cortex revealed by reverse correlation of synaptic input. <i>Nature Neuroscience</i> , 2014, 17, 866-875.	7.1	80
48	Bayesian spike inference from calcium imaging data. , 2013, , .		44
49	Computing loss of efficiency in optimal Bayesian decoders given noisy or incomplete spike trains. <i>Network: Computation in Neural Systems</i> , 2013, 24, 75-98.	2.2	4
50	Fast Spatiotemporal Smoothing of Calcium Measurements in Dendritic Trees. <i>PLoS Computational Biology</i> , 2012, 8, e1002569.	1.5	10
51	A Bayesian compressed-sensing approach for reconstructing neural connectivity from subsampled anatomical data. <i>Journal of Computational Neuroscience</i> , 2012, 33, 371-388.	0.6	18
52	Robust particle filters via sequential pairwise reparameterized Gibbs sampling. , 2012, , .		1
53	Efficient Coding of Spatial Information in the Primate Retina. <i>Journal of Neuroscience</i> , 2012, 32, 16256-16264.	1.7	94
54	Optimal experimental design for sampling voltage on dendritic trees in the low-SNR regime. <i>Journal of Computational Neuroscience</i> , 2012, 32, 347-366.	0.6	13

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55	Inferring synaptic inputs given a noisy voltage trace via sequential Monte Carlo methods. <i>Journal of Computational Neuroscience</i> , 2012, 33, 1-19.	0.6	46
56	Modeling the impact of common noise inputs on the network activity of retinal ganglion cells. <i>Journal of Computational Neuroscience</i> , 2012, 33, 97-121.	0.6	94
57	EMG Prediction From Motor Cortical Recordings via a Nonnegative Point-Process Filter. <i>IEEE Transactions on Biomedical Engineering</i> , 2012, 59, 1829-1838.	2.5	21
58	Efficient methods for sampling spike trains in networks of coupled neurons. <i>Annals of Applied Statistics</i> , 2011, 5, .	0.5	6
59	Imaging Action Potentials with Calcium Indicators. <i>Cold Spring Harbor Protocols</i> , 2011, 2011, pdb.prot5650.	0.2	33
60	Temporal Precision in the Visual Pathway through the Interplay of Excitation and Stimulus-Driven Suppression. <i>Journal of Neuroscience</i> , 2011, 31, 11313-11327.	1.7	71
61	A Bayesian approach for inferring neuronal connectivity from calcium fluorescent imaging data. <i>Annals of Applied Statistics</i> , 2011, 5, .	0.5	79
62	Designing optimal stimuli to control neuronal spike timing. <i>Journal of Neurophysiology</i> , 2011, 106, 1038-1053.	0.9	47
63	Automating the design of informative sequences of sensory stimuli. <i>Journal of Computational Neuroscience</i> , 2011, 30, 181-200.	0.6	16
64	Kalman filter mixture model for spike sorting of non-stationary data. <i>Journal of Neuroscience Methods</i> , 2011, 196, 159-169.	1.3	70
65	Efficient Markov Chain Monte Carlo Methods for Decoding Neural Spike Trains. <i>Neural Computation</i> , 2011, 23, 46-96.	1.3	45
66	Model-Based Decoding, Information Estimation, and Change-Point Detection Techniques for Multineuron Spike Trains. <i>Neural Computation</i> , 2011, 23, 1-45.	1.3	123
67	Hidden Markov Models for the Stimulus-Response Relationships of Multistate Neural Systems. <i>Neural Computation</i> , 2011, 23, 1071-1132.	1.3	57
68	Incorporating Naturalistic Correlation Structure Improves Spectrogram Reconstruction from Neuronal Activity in the Songbird Auditory Midbrain. <i>Journal of Neuroscience</i> , 2011, 31, 3828-3842.	1.7	30
69	A Generalized Linear Model for Estimating Spectrotemporal Receptive Fields from Responses to Natural Sounds. <i>PLoS ONE</i> , 2011, 6, e16104.	1.1	103
70	Efficient computation of the maximum a posteriori path and parameter estimation in integrate-and-fire and more general state-space models. <i>Journal of Computational Neuroscience</i> , 2010, 29, 89-105.	0.6	33
71	A new look at state-space models for neural data. <i>Journal of Computational Neuroscience</i> , 2010, 29, 107-126.	0.6	165
72	Fast Kalman filtering on quasilinear dendritic trees. <i>Journal of Computational Neuroscience</i> , 2010, 28, 211-228.	0.6	24

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73	Population decoding of motor cortical activity using a generalized linear model with hidden states. Journal of Neuroscience Methods, 2010, 189, 267-280.	1.3	74
74	Functional connectivity in the retina at the resolution of photoreceptors. Nature, 2010, 467, 673-677.	13.7	307
75	Fast Nonnegative Deconvolution for Spike Train Inference From Population Calcium Imaging. Journal of Neurophysiology, 2010, 104, 3691-3704.	0.9	404
76	A generalized linear model of the impact of direct and indirect inputs to the lateral geniculate nucleus. Journal of Vision, 2010, 10, 22-22.	0.1	28
77	Efficient, adaptive estimation of two-dimensional firing rate surfaces via Gaussian process methods. Network: Computation in Neural Systems, 2010, 21, 142-168.	2.2	30
78	A low-noise, single-photon avalanche diode in standard 0.13µm complementary metal-oxide-semiconductor process. Applied Physics Letters, 2010, 97, .	1.5	33
79	Sequential Optimal Design of Neurophysiology Experiments. Neural Computation, 2009, 21, 619-687.	1.3	92
80	Smoothing of, and Parameter Estimation from, Noisy Biophysical Recordings. PLoS Computational Biology, 2009, 5, e1000379.	1.5	74
81	Neural Decoding of Hand Motion Using a Linear State-Space Model With Hidden States. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2009, 17, 370-378.	2.7	62
82	The relationship between optimal and biologically plausible decoding of stimulus velocity in the retina. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2009, 26, B25.	0.8	2
83	Spike Inference from Calcium Imaging Using Sequential Monte Carlo Methods. Biophysical Journal, 2009, 97, 636-655.	0.2	197
84	Mean-Field Approximations for Coupled Populations of Generalized Linear Model Spiking Neurons with Markov Refractoriness. Neural Computation, 2009, 21, 1203-1243.	1.3	41
85	Integral equation methods for computing likelihoods and their derivatives in the stochastic integrate-and-fire model. Journal of Computational Neuroscience, 2008, 24, 69-79.	0.6	16
86	Spatio-temporal correlations and visual signalling in a complete neuronal population. Nature, 2008, 454, 995-999.	13.7	1,128
87	Undersmoothed Kernel Entropy Estimators. IEEE Transactions on Information Theory, 2008, 54, 4384-4388.	1.5	17
88	A Coincidence-Based Test for Uniformity Given Very Sparsely Sampled Discrete Data. IEEE Transactions on Information Theory, 2008, 54, 4750-4755.	1.5	99
89	State-Space Decoding of Goal-Directed Movements. IEEE Signal Processing Magazine, 2008, 25, 78-86.	4.6	30
90	Inferring input nonlinearities in neural encoding models. Network: Computation in Neural Systems, 2008, 19, 35-67.	2.2	69

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91	Statistical models for neural encoding, decoding, and optimal stimulus design. Progress in Brain Research, 2007, 165, 493-507.	0.9	236
92	Common-input models for multiple neural spike-train data. Network: Computation in Neural Systems, 2007, 18, 375-407.	2.2	91
93	Linear Encoding of Muscle Activity in Primary Motor Cortex and Cerebellum. Journal of Neurophysiology, 2006, 96, 2578-2592.	0.9	73
94	Efficient Estimation of Detailed Single-Neuron Models. Journal of Neurophysiology, 2006, 96, 872-890.	0.9	112
95	The most likely voltage path and large deviations approximations for integrate-and-fire neurons. Journal of Computational Neuroscience, 2006, 21, 71-87.	0.6	33
96	Efficient model-based design of neurophysiological experiments. , 2006, 2006, 599-602.		1
97	The Spike-Triggered Average of the Integrate-and-Fire Cell Driven by Gaussian White Noise. Neural Computation, 2006, 18, 2592-2616.	1.3	26
98	Comparing integrate-and-fire models estimated using intracellular and extracellular data. Neurocomputing, 2005, 65-66, 379-385.	3.5	24
99	Asymptotic Theory of Information-Theoretic Experimental Design. Neural Computation, 2005, 17, 1480-1507.	1.3	80
100	Prediction and Decoding of Retinal Ganglion Cell Responses with a Probabilistic Spiking Model. Journal of Neuroscience, 2005, 25, 11003-11013.	1.7	319
101	Spatiotemporal Tuning of Motor Cortical Neurons for Hand Position and Velocity. Journal of Neurophysiology, 2004, 91, 515-532.	0.9	315
102	Maximum likelihood estimation of cascade point-process neural encoding models. Network: Computation in Neural Systems, 2004, 15, 243-262.	2.2	292
103	Maximum Likelihood Estimation of a Stochastic Integrate-and-Fire Neural Encoding Model. Neural Computation, 2004, 16, 2533-2561.	1.3	224
104	Superlinear Population Encoding of Dynamic Hand Trajectory in Primary Motor Cortex. Journal of Neuroscience, 2004, 24, 8551-8561.	1.7	109
105	Maximum likelihood estimation of cascade point-process neural encoding models. Network: Computation in Neural Systems, 2004, 15, 243-62.	2.2	210
106	Noise-driven adaptation: in vitro and mathematical analysis. Neurocomputing, 2003, 52-54, 877-883.	3.5	19
107	Estimation of Entropy and Mutual Information. Neural Computation, 2003, 15, 1191-1253.	1.3	956
108	Convergence properties of three spike-triggered analysis techniques. Network: Computation in Neural Systems, 2003, 14, 437-464.	2.2	54

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109	Convergence properties of three spike-triggered analysis techniques. Network: Computation in Neural Systems, 2003, 14, 437-464.	2.2	114
110	Convergence properties of three spike-triggered analysis techniques. Network: Computation in Neural Systems, 2003, 14, 437-64.	2.2	72
111	Instant neural control of a movement signal. Nature, 2002, 416, 141-142.	13.7	1,309
112	Maximum likelihood estimation of cascade point-process neural encoding models. , 0, .		222