

Tatyana O Sharpee

List of Publications by Year in descending order

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Version: 2024-02-01

65
papers

2,826
citations

218677
26
h-index

197818
49
g-index

74
all docs

74
docs citations

74
times ranked

2569
citing authors

#	ARTICLE	IF	CITATIONS
1	Visual adaptation: Neural, psychological and computational aspects. Vision Research, 2007, 47, 3125-3131.	1.4	306
2	Adaptive filtering enhances information transmission in visual cortex. Nature, 2006, 439, 936-942.	27.8	290
3	Analyzing Neural Responses to Natural Signals: Maximally Informative Dimensions. Neural Computation, 2004, 16, 223-250.	2.2	256
4	Cooperative Nonlinearities in Auditory Cortical Neurons. Neuron, 2008, 58, 956-966.	8.1	123
5	Associative Learning Enhances Population Coding by Inverting Interneuronal Correlation Patterns. Neuron, 2013, 78, 352-363.	8.1	116
6	Hierarchical computation in the canonical auditory cortical circuit. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 21894-21899.	7.1	101
7	Maximally informative foraging by <i>Caenorhabditis elegans</i> . ELife, 2014, 3, .	6.0	98
8	Transition to Chaos in Random Networks with Cell-Type-Specific Connectivity. Physical Review Letters, 2015, 114, 088101.	7.8	97
9	Hierarchical representations in the auditory cortex. Current Opinion in Neurobiology, 2011, 21, 761-767.	4.2	92
10	Computational Identification of Receptive Fields. Annual Review of Neuroscience, 2013, 36, 103-120.	10.7	79
11	The Fine Structure of Shape Tuning in Area V4. Neuron, 2013, 78, 1102-1115.	8.1	77
12	Neural Mechanisms for Evaluating Environmental Variability in <i>Caenorhabditis elegans</i> . Neuron, 2015, 86, 428-441.	8.1	75
13	Critical and maximally informative encoding between neural populations in the retina. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 2533-2538.	7.1	69
14	Emergence of Learned Categorical Representations within an Auditory Forebrain Circuit. Journal of Neuroscience, 2011, 31, 2595-2606.	3.6	58
15	Hyperbolic geometry of the olfactory space. Science Advances, 2018, 4, eaaq1458.	10.3	56
16	Preserving Information in Neural Transmission. Journal of Neuroscience, 2009, 29, 6207-6216.	3.6	54
17	Second Order Dimensionality Reduction Using Minimum and Maximum Mutual Information Models. PLoS Computational Biology, 2011, 7, e1002249.	3.2	53
18	Trade-off between curvature tuning and position invariance in visual area V4. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 11618-11623.	7.1	48

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19	Receptive field dimensionality increases from the auditory midbrain to cortex. <i>Journal of Neurophysiology</i> , 2012, 107, 2594-2603.	1.8	47
20	Spinal Locomotor Circuits Develop Using Hierarchical Rules Based on Motorneuron Position and Identity. <i>Neuron</i> , 2015, 87, 1008-1021.	8.1	47
21	Predictable irregularities in retinal receptive fields. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 16499-16504.	7.1	46
22	On the Importance of Static Nonlinearity in Estimating Spatiotemporal Neural Filters With Natural Stimuli. <i>Journal of Neurophysiology</i> , 2008, 99, 2496-2509.	1.8	44
23	Responses of V1 Neurons to Two-Dimensional Hermite Functions. <i>Journal of Neurophysiology</i> , 2006, 95, 379-400.	1.8	39
24	Mathematical approaches to modeling development and reprogramming. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 5076-5082.	7.1	39
25	Toward Functional Classification of Neuronal Types. <i>Neuron</i> , 2014, 83, 1329-1334.	8.1	38
26	A Robust Feedforward Model of the Olfactory System. <i>PLoS Computational Biology</i> , 2016, 12, e1004850.	3.2	36
27	Minimal Models of Multidimensional Computations. <i>PLoS Computational Biology</i> , 2011, 7, e1001111.	3.2	34
28	Information theory of adaptation in neurons, behavior, and mood. <i>Current Opinion in Neurobiology</i> , 2014, 25, 47-53.	4.2	27
29	Encoding of Temporal Information by Timing, Rate, and Place in Cat Auditory Cortex. <i>PLoS ONE</i> , 2010, 5, e11531.	2.5	27
30	Estimating linear and nonlinear models using Rényi divergences. <i>Network: Computation in Neural Systems</i> , 2009, 20, 49-68.	3.6	26
31	Identifying Functional Bases for Multidimensional Neural Computations. <i>Neural Computation</i> , 2013, 25, 1870-1890.	2.2	25
32	Low-dimensional dynamics of structured random networks. <i>Physical Review E</i> , 2016, 93, 022302.	2.1	25
33	Two-dimensional adaptation in the auditory forebrain. <i>Journal of Neurophysiology</i> , 2011, 106, 1841-1861.	1.8	22
34	Analyzing multicomponent receptive fields from neural responses to natural stimuli. <i>Network: Computation in Neural Systems</i> , 2011, 22, 45-73.	3.6	21
35	Cross-orientation suppression in visual area V2. <i>Nature Communications</i> , 2017, 8, 15739.	12.8	21
36	Comparison of information and variance maximization strategies for characterizing neural feature selectivity. <i>Statistics in Medicine</i> , 2007, 26, 4009-4031.	1.6	16

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37	Neural Decision Boundaries for Maximal Information Transmission. PLoS ONE, 2007, 2, e646.	2.5	15
38	Characterizing Responses of Translation-Invariant Neurons to Natural Stimuli: Maximally Informative Invariant Dimensions. Neural Computation, 2012, 24, 2384-2421.	2.2	15
39	Hyperbolic geometry of gene expression. IScience, 2021, 24, 102225.	4.1	15
40	Contextual modulation of V1 receptive fields depends on their spatial symmetry. Journal of Computational Neuroscience, 2009, 26, 203-218.	1.0	13
41	Multidimensional receptive field processing by cat primary auditory cortical neurons. Neuroscience, 2017, 359, 130-141.	2.3	13
42	Dynamical Electrical Complexity Is Reduced during Neuronal Differentiation in Autism Spectrum Disorder. Stem Cell Reports, 2019, 13, 474-484.	4.8	13
43	Eigenvalue spectra of large correlated random matrices. Physical Review E, 2016, 94, 050101.	2.1	12
44	Linking neural responses to behavior with information-preserving population vectors. Current Opinion in Behavioral Sciences, 2019, 29, 37-44.	3.9	11
45	Optimizing Neural Information Capacity through Discretization. Neuron, 2017, 94, 954-960.	8.1	10
46	An argument for hyperbolic geometry in neural circuits. Current Opinion in Neurobiology, 2019, 58, 101-104.	4.2	10
47	Maximally informative pairwise interactions in networks. Physical Review E, 2009, 80, 031914.	2.1	9
48	Defining rhythmic locomotor burst patterns using a continuous wavelet transform. Annals of the New York Academy of Sciences, 2010, 1198, 133-139.	3.8	8
49	Spike Triggered Covariance in Strongly Correlated Gaussian Stimuli. PLoS Computational Biology, 2013, 9, e1003206.	3.2	8
50	Double-Gabor Filters Are Independent Components of Small Translation-Invariant Image Patches. Neural Computation, 2013, 25, 922-939.	2.2	7
51	A Low-Rank Method for Characterizing High-Level Neural Computations. Frontiers in Computational Neuroscience, 2017, 11, 68.	2.1	6
52	How inhibitory neurons increase information transmission under threshold modulation. Cell Reports, 2021, 35, 109158.	6.4	4
53	Using Global t-SNE to Preserve Intercluster Data Structure. Neural Computation, 2022, 34, 1637-1651.	2.2	4
54	Adaptive Switches in Midbrain Circuits. Neuron, 2012, 73, 6-7.	8.1	3

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55	How Invariant Feature Selectivity Is Achieved in Cortex. <i>Frontiers in Synaptic Neuroscience</i> , 2016, 8, 26.	2.5	3
56	Quantifying Information Conveyed by Large Neuronal Populations. <i>Neural Computation</i> , 2019, 31, 1015-1047.	2.2	3
57	Hyperbolic odorant mixtures as a basis for more efficient signaling between flowering plants and bees. <i>PLoS ONE</i> , 2022, 17, e0270358.	2.5	3
58	The San Diego Nathan Shock Center: tackling the heterogeneity of aging. <i>GeroScience</i> , 2021, 43, 2139-2148.	4.6	2
59	Probing feature selectivity of neurons in primary visual cortex with natural stimuli. , 2004, 5467, 212-222.		1
60	Function determines structure in complex neural networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 8327-8328.	7.1	1
61	On texture, form, and fixational eye movements. <i>Current Opinion in Neurobiology</i> , 2017, 46, 228-233.	4.2	1
62	Plasticity to the Rescue. <i>Neuron</i> , 2016, 92, 935-936.	8.1	0
63	Optimal information transmission by overlapping retinal cell mosaics. , 2018, 2018, .		0
64	Protein Epistasis Revealed from Thermostability Profiles of <i>Nicotiana tabacum</i> 5â€piâ€Aristolochene Synthase. <i>FASEB Journal</i> , 2013, 27, 561.5.	0.5	0
65	Taking a close look at electrosensing. <i>ELife</i> , 2016, 5, .	6.0	0