Joseph T Lizier

List of Publications by Year
in descending order

93 papers	4,151 citations	117625 34 h-index	138484 58 g-index
102 all docs	102 docs citations	102 times ranked	2921 citing authors

#	Article	IF	Citations
1	Self-organization and information transfer in Antarctic krill swarms. Proceedings of the Royal Society B: Biological Sciences, 2022, 289, 20212361.	2.6	7
2	Early lock-in of structured and specialised information flows during neural development. ELife, 2022, 11, .	6.0	3
3	Disentangling high-order mechanisms and high-order behaviours in complex systems. Nature Physics, 2022, 18, 476-477.	16.7	23
4	Locomotion, interactions and information transfer vary according to context in a cryptic fish species. Behavioral Ecology and Sociobiology, 2021, 75, 1.	1.4	7
5	Assessing the significance of directed and multivariate measures of linear dependence between time series. Physical Review Research, 2021, 3, .	3.6	15
6	Inferring network properties from time series using transfer entropy and mutual information: Validation of multivariate versus bivariate approaches. Network Neuroscience, 2021, 5, 1-32.	2.6	19
7	The effect of predation risk on group behaviour and information flow during repeated collective decisions. Animal Behaviour, 2021, 173, 215-239.	1.9	9
8	Estimating Transfer Entropy in Continuous Time Between Neural Spike Trains or Other Event-Based Data. PLoS Computational Biology, 2021, 17, e1008054.	3.2	29
9	Information dynamics in neuromorphic nanowire networks. Scientific Reports, 2021, 11, 13047.	3.3	30
10	MNIST classification using Neuromorphic Nanowire Networks. , 2021, , .		7
11	Nonlinear reconfiguration of network edges, topology and information content during an artificial learning task. Brain Informatics, 2021, 8, 26.	3.0	4
12	Deriving pairwise transfer entropy from network structure and motifs. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20190779.	2.1	17
13	Generalised Measures of Multivariate Information Content. Entropy, 2020, 22, 216.	2.2	14
14	Transitions in information processing dynamics at the whole-brain network level are driven by alterations in neural gain. PLoS Computational Biology, 2019, 15, e1006957.	3.2	56
15	Speed-mediated properties of schooling. Royal Society Open Science, 2019, 6, 181482.	2.4	25
16	Large-scale directed network inference with multivariate transfer entropy and hierarchical statistical testing. Network Neuroscience, 2019, 3, 827-847.	2.6	68
17	Conformity in the collective: differences in hunger affect individual and group behavior in a shoaling fish. Behavioral Ecology, 2019, 30, 968-974.	2.2	14
18	Self-referential basis of undecidable dynamics: From the Liar paradox and the halting problem to the edge of chaos. Physics of Life Reviews, 2019, 31, 134-156.	2.8	16

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19	IDTxl: The Information Dynamics Toolkit xl: a Python package for the efficient analysis of multivariate information dynamics in networks. Journal of Open Source Software, 2019, 4, 1081.	4.6	69
20	Informative and misinformative interactions in a school of fish. Swarm Intelligence, 2018, 12, 283-305.	2.2	44
21	Predictable information in neural signals during resting state is reduced in autism spectrum disorder. Human Brain Mapping, 2018, 39, 3227-3240.	3.6	20
22	Thermodynamics and computation during collective motion near criticality. Physical Review E, 2018, 97, 012120.	2.1	21
23	Cohesion, order and information flow in the collective motion of mixed-species shoals. Royal Society Open Science, 2018, 5, 181132.	2.4	39
24	An Interview-Based Study of Pioneering Experiences in Teaching and Learning Complex Systems in Higher Education. Complexity, 2018, 2018, 1-11.	1.6	5
25	Probability Mass Exclusions and the Directed Components of Mutual Information. Entropy, 2018, 20, 826.	2.2	10
26	Entropy balance and information processing in bipartite and nonbipartite composite systems. Physical Review E, 2018, 98, .	2.1	4
27	The demise of Angkor: Systemic vulnerability of urban infrastructure to climatic variations. Science Advances, 2018, 4, eaau4029.	10.3	34
28	Characterizing information-theoretic storage and transfer in continuous time processes. Physical Review E, 2018, 98, 012314.	2.1	12
29	Pointwise Partial Information Decomposition Using the Specificity and Ambiguity Lattices. Entropy, 2018, 20, 297.	2.2	53
30	Information Decomposition of Target Effects from Multi-Source Interactions: Perspectives on Previous, Current and Future Work. Entropy, 2018, 20, 307.	2.2	89
31	Partial information decomposition as a unified approach to the specification of neural goal functions. Brain and Cognition, 2017, 112, 25-38.	1.8	93
32	Quantifying Long-Range Interactions and Coherent Structure in Multi-Agent Dynamics. Artificial Life, 2017, 23, 34-57.	1.3	21
33	Transfer entropy in continuous time, with applications to jump and neural spiking processes. Physical Review E, 2017, 95, 032319.	2.1	43
34	Information-Theoretic Evidence for Predictive Coding in the Face-Processing System. Journal of Neuroscience, 2017, 37, 8273-8283.	3.6	34
35	Criticality and Information Dynamics in Epidemiological Models. Entropy, 2017, 19, 194.	2.2	29
36	Quantifying Information Modification in Developing Neural Networks via Partial Information Decomposition. Entropy, 2017, 19, 494.	2.2	47

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37	Transfer entropy in physical systems and the arrow of time. Physical Review E, 2016, 94, 022135.	2.1	26
38	An Introduction to Transfer Entropy. , 2016, , .		152
39	Transfer Entropy. , 2016, , 65-95.		37
40	Partial information decomposition as a unified approach to the characterization and design of neural goal functions. BMC Neuroscience, 2015, 16, .	1.9	0
41	Bits from Brains for Biologically Inspired Computing. Frontiers in Robotics and AI, 2015, 2, .	3.2	74
42	Fisher transfer entropy: quantifying the gain in transient sensitivity. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150610.	2.1	9
43	Human breath-print identification by E-nose, using information-theoretic feature selection prior to classification. Sensors and Actuators B: Chemical, 2015, 217, 165-174.	7.8	37
44	Feature Selection for Chemical Sensor Arrays Using Mutual Information. PLoS ONE, 2014, 9, e89840.	2.5	15
45	JIDT: An Information-Theoretic Toolkit for Studying the Dynamics of Complex Systems. Frontiers in Robotics and AI, 2014, 1, .	3.2	248
46	Local active information storage as a tool to understand distributed neural information processing. Frontiers in Neuroinformatics, 2014, 8, 1.	2.5	168
47	Reduced predictable information in brain signals in autism spectrum disorder. Frontiers in Neuroinformatics, 2014, 8, 9.	2.5	45
48	How to measure local active information storage in neural systems. , 2014, , .		2
49	Measuring the Dynamics of Information Processing on a Local Scale in Time and Space. Understanding Complex Systems, 2014, , 161-193.	0.6	20
50	Measuring Information Dynamics in Swarms. Emergence, Complexity and Computation, 2014, , 343-364.	0.3	11
51	A Framework for the Local Information Dynamics of Distributed Computation in Complex Systems. Emergence, Complexity and Computation, 2014, , 115-158.	0.3	32
52	Transfer Entropy and Transient Limits of Computation. Scientific Reports, 2014, 4, 5394.	3.3	52
53	Towards Quantifying Interaction Networks in a Football Match. Lecture Notes in Computer Science, 2014, , 1-12.	1.3	11
54	Inferring effective computational connectivity using incrementally conditioned multivariate transfer entropy. BMC Neuroscience, 2013, 14, .	1.9	7

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55	The Local Information Dynamics of Distributed Computation in Complex Systems. Springer Theses, 2013, , .	0.1	62
56	Information Flow in a Kinetic Ising Model Peaks in the Disordered Phase. Physical Review Letters, 2013, 111, 177203.	7.8	99
57	Comparing dynamics of cascading failures between network-centric and power flow models. International Journal of Electrical Power and Energy Systems, 2013, 49, 369-379.	5.5	32
58	Towards a synergy-based approach to measuring information modification. , 2013, , .		35
59	Moving Frames of Reference, Relativity and Invariance in Transfer Entropy and Information Dynamics. Entropy, 2013, 15, 177-197.	2.2	14
60	On Thermodynamic Interpretation of Transfer Entropy. Entropy, 2013, 15, 524-543.	2.2	70
61	Measuring Information-Transfer Delays. PLoS ONE, 2013, 8, e55809.	2.5	209
62	Computation in Complex Systems. Springer Theses, 2013, , 13-52.	0.1	4
63	Information Transfer. Springer Theses, 2013, , 79-115.	0.1	0
64	Information Storage. Springer Theses, 2013, , 53-77.	0.1	0
65	Information Transfer in Biological and Bio-Inspired Systems. Springer Theses, 2013, , 177-202.	0.1	0
66	Information Dynamics in Networks and Phase Transitions. Springer Theses, 2013, , 141-161.	0.1	0
67	Information Modification. Springer Theses, 2013, , 117-140.	0.1	0
68	Identifying influential spreaders and efficiently estimating infection numbers in epidemic models: A walk counting approach. Europhysics Letters, 2012, 99, 68007.	2.0	90
69	Coherent information structure in complex computation. Theory in Biosciences, 2012, 131, 193-203.	1.4	35
70	Information processing in echo state networks at the edge of chaos. Theory in Biosciences, 2012, 131, 205-213.	1.4	205
71	Information storage, loop motifs, and clustered structure in complex networks. Physical Review E, 2012, 86, 026110.	2.1	46
72	Quantifying and Tracing Information Cascades in Swarms. PLoS ONE, 2012, 7, e40084.	2.5	67

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73	Local measures of information storage in complex distributed computation. Information Sciences, 2012, 208, 39-54.	6.9	130
74	Multivariate information-theoretic measures reveal directed information structure and task relevant changes in fMRI connectivity. Journal of Computational Neuroscience, 2011, 30, 85-107.	1.0	165
75	Maximized directed information transfer in critical neuronal networks. BMC Neuroscience, 2011, 12, P18.	1.9	2
76	Spatiotemporal information transfer pattern differences in motor selection. BMC Neuroscience, 2011, 12, .	1.9	1
77	Fisher Information at the Edge of Chaos in Random Boolean Networks. Artificial Life, 2011, 17, 315-329.	1.3	37
78	Relating Fisher information to order parameters. Physical Review E, 2011, 84, 041116.	2.1	89
79	Information storage and transfer in the synchronization process in locally-connected networks. , 2011, , .		15
80	Information Dynamics in Small-World Boolean Networks. Artificial Life, 2011, 17, 293-314.	1.3	83
81	Functional and Structural Topologies in Evolved Neural Networks. Lecture Notes in Computer Science, 2011, , 140-147.	1.3	4
82	Differentiating information transfer and causal effect. European Physical Journal B, 2010, 73, 605-615.	1.5	176
83	Information modification and particle collisions in distributed computation. Chaos, 2010, 20, 037109.	2.5	98
84	Directed information structure in inter-regional cortical interactions in a visuomotor tracking task. BMC Neuroscience, 2009, 10, .	1.9	1
85	Local information transfer as a spatiotemporal filter for complex systems. Physical Review E, 2008, 77, 026110.	2.1	211
86	Spatiotemporal Anomaly Detection in Gas Monitoring Sensor Networks. , 2008, , 90-105.		42
87	Detecting Non-trivial Computation in Complex Dynamics. , 2007, , 895-904.		15
88	Information Transfer by Particles in Cellular Automata. , 2007, , 49-60.		4
89	On the Periodicity of Time-series Network and Service Metrics. , 2005, , .		0
90	Splice losses in holey optical fibers. IEEE Photonics Technology Letters, 2001, 13, 794-796.	2.5	55

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91	Tapered holey fibers for spot-size and numerical-aperture conversion. Optics Letters, 2001, 26, 1042.	3.3	69
92	Bragg Scattering of Surface Waves by a Photo-Induced Array. Journal of Infrared, Millimeter and Terahertz Waves, 2000, 21, 717-724.	0.6	0
93	Bits from Brains: Analyzing Distributed Computation in Neural Systems. , 0, , 429-467.		0