Joseph T Lizier

List of Publications by Year
in descending order

93	4,151	117625	138484
papers	citations	34 h-index	58 g-index

102	102	102	2921
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	JIDT: An Information-Theoretic Toolkit for Studying the Dynamics of Complex Systems. Frontiers in Robotics and AI, 2014, 1, .	3.2	248
2	Local information transfer as a spatiotemporal filter for complex systems. Physical Review E, 2008, 77, 026110.	2.1	211
3	Measuring Information-Transfer Delays. PLoS ONE, 2013, 8, e55809.	2.5	209
4	Information processing in echo state networks at the edge of chaos. Theory in Biosciences, 2012, 131, 205-213.	1.4	205
5	Differentiating information transfer and causal effect. European Physical Journal B, 2010, 73, 605-615.	1.5	176
6	Local active information storage as a tool to understand distributed neural information processing. Frontiers in Neuroinformatics, 2014, 8, 1.	2.5	168
7	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
8	An Introduction to Transfer Entropy. , 2016, , .		152
9	Local measures of information storage in complex distributed computation. Information Sciences, 2012, 208, 39-54.	6.9	130
10	Information Flow in a Kinetic Ising Model Peaks in the Disordered Phase. Physical Review Letters, 2013, 111, 177203.	7.8	99
11	Information modification and particle collisions in distributed computation. Chaos, 2010, 20, 037109.	2.5	98
12	Partial information decomposition as a unified approach to the specification of neural goal functions. Brain and Cognition, 2017, 112, 25-38.	1.8	93
13	Identifying influential spreaders and efficiently estimating infection numbers in epidemic models: A walk counting approach. Europhysics Letters, 2012, 99, 68007.	2.0	90
14	Relating Fisher information to order parameters. Physical Review E, 2011, 84, 041116.	2.1	89
15	Information Decomposition of Target Effects from Multi-Source Interactions: Perspectives on Previous, Current and Future Work. Entropy, 2018, 20, 307.	2.2	89
16	Information Dynamics in Small-World Boolean Networks. Artificial Life, 2011, 17, 293-314.	1.3	83
17	Bits from Brains for Biologically Inspired Computing. Frontiers in Robotics and AI, 2015, 2, .	3.2	74
18	On Thermodynamic Interpretation of Transfer Entropy. Entropy, 2013, 15, 524-543.	2.2	70

#	Article	IF	Citations
19	Tapered holey fibers for spot-size and numerical-aperture conversion. Optics Letters, 2001, 26, 1042.	3.3	69
20	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
21	Large-scale directed network inference with multivariate transfer entropy and hierarchical statistical testing. Network Neuroscience, 2019, 3, 827-847.	2.6	68
22	Quantifying and Tracing Information Cascades in Swarms. PLoS ONE, 2012, 7, e40084.	2.5	67
23	The Local Information Dynamics of Distributed Computation in Complex Systems. Springer Theses, 2013, , .	0.1	62
24	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
25	Splice losses in holey optical fibers. IEEE Photonics Technology Letters, 2001, 13, 794-796.	2.5	55
26	Pointwise Partial Information Decomposition Using the Specificity and Ambiguity Lattices. Entropy, 2018, 20, 297.	2.2	53
27	Transfer Entropy and Transient Limits of Computation. Scientific Reports, 2014, 4, 5394.	3.3	52
28	Quantifying Information Modification in Developing Neural Networks via Partial Information Decomposition. Entropy, 2017, 19, 494.	2.2	47
29	Information storage, loop motifs, and clustered structure in complex networks. Physical Review E, 2012, 86, 026110.	2.1	46
30	Reduced predictable information in brain signals in autism spectrum disorder. Frontiers in Neuroinformatics, 2014, 8, 9.	2.5	45
31	Informative and misinformative interactions in a school of fish. Swarm Intelligence, 2018, 12, 283-305.	2.2	44
32	Transfer entropy in continuous time, with applications to jump and neural spiking processes. Physical Review E, 2017, 95, 032319.	2.1	43
33	Spatiotemporal Anomaly Detection in Gas Monitoring Sensor Networks. , 2008, , 90-105.		42
34	Cohesion, order and information flow in the collective motion of mixed-species shoals. Royal Society Open Science, 2018, 5, 181132.	2.4	39
35	Fisher Information at the Edge of Chaos in Random Boolean Networks. Artificial Life, 2011, 17, 315-329.	1.3	37
36	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

#	Article	IF	Citations
37	Transfer Entropy. , 2016, , 65-95.		37
38	Coherent information structure in complex computation. Theory in Biosciences, 2012, 131, 193-203.	1.4	35
39	Towards a synergy-based approach to measuring information modification. , 2013, , .		35
40	Information-Theoretic Evidence for Predictive Coding in the Face-Processing System. Journal of Neuroscience, 2017, 37, 8273-8283.	3.6	34
41	The demise of Angkor: Systemic vulnerability of urban infrastructure to climatic variations. Science Advances, 2018, 4, eaau4029.	10.3	34
42	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
43	A Framework for the Local Information Dynamics of Distributed Computation in Complex Systems. Emergence, Complexity and Computation, 2014, , 115-158.	0.3	32
44	Information dynamics in neuromorphic nanowire networks. Scientific Reports, 2021, 11, 13047.	3.3	30
45	Criticality and Information Dynamics in Epidemiological Models. Entropy, 2017, 19, 194.	2.2	29
46	Estimating Transfer Entropy in Continuous Time Between Neural Spike Trains or Other Event-Based Data. PLoS Computational Biology, 2021, 17, e1008054.	3.2	29
47	Transfer entropy in physical systems and the arrow of time. Physical Review E, 2016, 94, 022135.	2.1	26
48	Speed-mediated properties of schooling. Royal Society Open Science, 2019, 6, 181482.	2.4	25
49	Disentangling high-order mechanisms and high-order behaviours in complex systems. Nature Physics, 2022, 18, 476-477.	16.7	23
50	Quantifying Long-Range Interactions and Coherent Structure in Multi-Agent Dynamics. Artificial Life, 2017, 23, 34-57.	1.3	21
51	Thermodynamics and computation during collective motion near criticality. Physical Review E, 2018, 97, 012120.	2.1	21
52	Measuring the Dynamics of Information Processing on a Local Scale in Time and Space. Understanding Complex Systems, 2014, , 161-193.	0.6	20
53	Predictable information in neural signals during resting state is reduced in autism spectrum disorder. Human Brain Mapping, 2018, 39, 3227-3240.	3.6	20
54	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

#	Article	IF	Citations
55	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
56	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
57	Information storage and transfer in the synchronization process in locally-connected networks. , 2011, , .		15
58	Feature Selection for Chemical Sensor Arrays Using Mutual Information. PLoS ONE, 2014, 9, e89840.	2.5	15
59	Assessing the significance of directed and multivariate measures of linear dependence between time series. Physical Review Research, 2021, 3, .	3.6	15
60	Detecting Non-trivial Computation in Complex Dynamics. , 2007, , 895-904.		15
61	Moving Frames of Reference, Relativity and Invariance in Transfer Entropy and Information Dynamics. Entropy, 2013, 15, 177-197.	2.2	14
62	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
63	Generalised Measures of Multivariate Information Content. Entropy, 2020, 22, 216.	2.2	14
64	Characterizing information-theoretic storage and transfer in continuous time processes. Physical Review E, 2018, 98, 012314.	2.1	12
65	Measuring Information Dynamics in Swarms. Emergence, Complexity and Computation, 2014, , 343-364.	0.3	11
66	Towards Quantifying Interaction Networks in a Football Match. Lecture Notes in Computer Science, 2014, , 1-12.	1.3	11
67	Probability Mass Exclusions and the Directed Components of Mutual Information. Entropy, 2018, 20, 826.	2.2	10
68	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
69	The effect of predation risk on group behaviour and information flow during repeated collective decisions. Animal Behaviour, 2021, 173, 215-239.	1.9	9
70	Inferring effective computational connectivity using incrementally conditioned multivariate transfer entropy. BMC Neuroscience, 2013, 14, .	1.9	7
71	Locomotion, interactions and information transfer vary according to context in a cryptic fish species. Behavioral Ecology and Sociobiology, 2021, 75, 1.	1.4	7
72	MNIST classification using Neuromorphic Nanowire Networks. , 2021, , .		7

#	Article	IF	Citations
73	Self-organization and information transfer in Antarctic krill swarms. Proceedings of the Royal Society B: Biological Sciences, 2022, 289, 20212361.	2.6	7
74	An Interview-Based Study of Pioneering Experiences in Teaching and Learning Complex Systems in Higher Education. Complexity, 2018, 2018, 1-11.	1.6	5
75	Entropy balance and information processing in bipartite and nonbipartite composite systems. Physical Review E, 2018, 98, .	2.1	4
76	Functional and Structural Topologies in Evolved Neural Networks. Lecture Notes in Computer Science, 2011, , 140-147.	1.3	4
77	Computation in Complex Systems. Springer Theses, 2013, , 13-52.	0.1	4
78	Information Transfer by Particles in Cellular Automata. , 2007, , 49-60.		4
79	Nonlinear reconfiguration of network edges, topology and information content during an artificial learning task. Brain Informatics, 2021, 8, 26.	3.0	4
80	Early lock-in of structured and specialised information flows during neural development. ELife, 2022, 11, .	6.0	3
81	Maximized directed information transfer in critical neuronal networks. BMC Neuroscience, 2011, 12, P18.	1.9	2
82	How to measure local active information storage in neural systems. , 2014, , .		2
83	Directed information structure in inter-regional cortical interactions in a visuomotor tracking task. BMC Neuroscience, 2009, 10, .	1.9	1
84	Spatiotemporal information transfer pattern differences in motor selection. BMC Neuroscience, 2011, 12, .	1.9	1
85	Bragg Scattering of Surface Waves by a Photo-Induced Array. Journal of Infrared, Millimeter and Terahertz Waves, 2000, 21, 717-724.	0.6	0
86	On the Periodicity of Time-series Network and Service Metrics. , 2005, , .		0
87	Partial information decomposition as a unified approach to the characterization and design of neural goal functions. BMC Neuroscience, 2015, 16, .	1.9	0
88	Bits from Brains: Analyzing Distributed Computation in Neural Systems. , 0, , 429-467.		0
89	Information Transfer. Springer Theses, 2013, , 79-115.	0.1	0
90	Information Storage. Springer Theses, 2013, , 53-77.	0.1	0

#	Article	IF	Citations
91	Information Transfer in Biological and Bio-Inspired Systems. Springer Theses, 2013, , 177-202.	0.1	0
92	Information Dynamics in Networks and Phase Transitions. Springer Theses, 2013, , 141-161.	0.1	0
93	Information Modification. Springer Theses, 2013, , 117-140.	0.1	0