

Liang Zhao

List of Publications by Year in descending order

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193
papers

2,759
citations

279798

23
h-index

223800

46
g-index

205
all docs

205
docs citations

205
times ranked

1824
citing authors

#	ARTICLE	IF	CITATIONS
1	Onset of traffic congestion in complex networks. Physical Review E, 2005, 71, 026125.	2.1	412
2	Attack vulnerability of scale-free networks due to cascading breakdown. Physical Review E, 2004, 70, 035101.	2.1	263
3	Time series clustering via community detection in networks. Information Sciences, 2016, 326, 227-242.	6.9	120
4	Tolerance of scale-free networks against attack-induced cascades. Physical Review E, 2005, 72, 025104.	2.1	107
5	Signal amplification of active rotators with phase-shifted coupling. European Physical Journal B, 2012, 85, 1.	1.5	96
6	Network-Based High Level Data Classification. IEEE Transactions on Neural Networks and Learning Systems, 2012, 23, 954-970.	11.3	73
7	Machine Learning in Complex Networks. , 2016, , .		62
8	Particle Competition and Cooperation in Networks for Semi-Supervised Learning. IEEE Transactions on Knowledge and Data Engineering, 2012, 24, 1686-1698.	5.7	56
9	Jamming in complex gradient networks. Physical Review E, 2005, 71, 065105.	2.1	55
10	Stochastic Competitive Learning in Complex Networks. IEEE Transactions on Neural Networks and Learning Systems, 2012, 23, 385-398.	11.3	54
11	Chaotic phase synchronization and desynchronization in an oscillator network for object selection. Neural Networks, 2009, 22, 728-737.	5.9	49
12	Network-Based Stochastic Semisupervised Learning. IEEE Transactions on Neural Networks and Learning Systems, 2012, 23, 451-466.	11.3	47
13	Particle competition for complex network community detection. Chaos, 2008, 18, 033107.	2.5	45
14	A nonparametric classification method based on K-associated graphs. Information Sciences, 2011, 181, 5435-5456.	6.9	45
15	Phase-noise-induced resonance in a single neuronal system. Physical Review E, 2011, 84, 031916.	2.1	40
16	NK Hybrid Genetic Algorithm for Clustering. IEEE Transactions on Evolutionary Computation, 2018, 22, 748-761.	10.0	38
17	Particle swarm optimization for network-based data classification. Neural Networks, 2019, 110, 243-255.	5.9	36
18	Phase-disorder-induced double resonance of neuronal activity. Physical Review E, 2010, 82, 010902.	2.1	35

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19	High-level pattern-based classification via tourist walks in networks. Information Sciences, 2015, 294, 109-126.	6.9	32
20	Complex networks: Dynamics and security. Pramana - Journal of Physics, 2005, 64, 483-502.	1.8	28
21	An incremental learning algorithm based on the K-associated graph for non-stationary data classification. Information Sciences, 2013, 246, 52-68.	6.9	26
22	Time series trend detection and forecasting using complex network topology analysis. Neural Networks, 2019, 117, 295-306.	5.9	26
23	A network of dynamically coupled chaotic maps for scene segmentation. IEEE Transactions on Neural Networks, 2001, 12, 1375-1385.	4.2	25
24	Optimal structure of complex networks for minimizing traffic congestion. Chaos, 2007, 17, 043103.	2.5	25
25	Selecting salient objects in real scenes: An oscillatory correlation model. Neural Networks, 2011, 24, 54-64.	5.9	25
26	Semi-supervised learning guided by the modularity measure in complex networks. Neurocomputing, 2012, 78, 30-37.	5.9	24
27	Fuzzy community structure detection by particle competition and cooperation. Soft Computing, 2013, 17, 659-673.	3.6	24
28	Global fire season severity analysis and forecasting. Computers and Geosciences, 2020, 134, 104339.	4.2	23
29	SCENE SEGMENTATION OF THE CHAOTIC OSCILLATOR NETWORK. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2000, 10, 1697-1708.	1.7	22
30	Chaotic synchronization in general network topology for scene segmentation. Neurocomputing, 2008, 71, 3360-3366.	5.9	21
31	Data clustering using controlled consensus in complex networks. Neurocomputing, 2013, 118, 132-140.	5.9	21
32	Organizational Data Classification Based on the Importance Concept of Complex Networks. IEEE Transactions on Neural Networks and Learning Systems, 2018, 29, 3361-3373.	11.3	20
33	Design of associative memories using cellular neural networks. Neurocomputing, 2009, 72, 2180-2188.	5.9	19
34	Semi-supervised learning from imperfect data through particle cooperation and competition. , 2010, , .		19
35	Uncovering overlapping cluster structures via stochastic competitive learning. Information Sciences, 2013, 247, 40-61.	6.9	19
36	Particle competition and cooperation for semi-supervised learning with label noise. Neurocomputing, 2015, 160, 63-72.	5.9	18

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37	A scheme for high level data classification using random walk and network measures. Expert Systems With Applications, 2018, 92, 289-303.	7.6	17
38	Spatiotemporal data analysis with chronological networks. Nature Communications, 2020, 11, 4036.	12.8	17
39	Partially labeled data stream classification with the semi-supervised K-associated graph. Journal of the Brazilian Computer Society, 2012, 18, 299-310.	1.3	15
40	An embedded imputation method via Attribute-based Decision Graphs. Expert Systems With Applications, 2016, 57, 159-177.	7.6	15
41	Transition to intermittent chaotic synchronization. Physical Review E, 2005, 72, 036212.	2.1	14
42	Computer-aided music composition with LSTM neural network and chaotic inspiration. , 2013, , .		14
43	Diversity-induced resonance for optimally suprathreshold signals. Chaos, 2020, 30, 103101.	2.5	14
44	Chaotic dynamics for multi-value content addressable memory. Neurocomputing, 2006, 69, 1628-1636.	5.9	13
45	Network-based supervised data classification by using an heuristic of ease of access. Neurocomputing, 2015, 149, 86-92.	5.9	13
46	A dynamical model with adaptive pixel moving for microarray images segmentation. Real Time Imaging, 2004, 10, 189-195.	1.6	12
47	Label propagation through neuronal synchrony. , 2010, , .		12
48	Particle competition and cooperation in networks for semi-supervised learning with concept drift. , 2012, , .		12
49	A Time Series Clustering Technique based on Community Detection in Networks. Procedia Computer Science, 2015, 53, 183-190.	2.0	12
50	Attribute-based Decision Graphs: A framework for multiclass data classification. Neural Networks, 2017, 85, 69-84.	5.9	12
51	A Network of Coupled Chaotic Maps for Adaptive Multi-Scale Image Segmentation. International Journal of Neural Systems, 2003, 13, 129-137.	5.2	11
52	Chaotic synchronization in 2D lattice for scene segmentation. Neurocomputing, 2008, 71, 2761-2771.	5.9	11
53	Network-based data classification: combining K-associated optimal graphs and high-level prediction. Journal of the Brazilian Computer Society, 2014, 20, .	1.3	11
54	Musical rhythmic pattern extraction using relevance of communities in networks. Information Sciences, 2016, 329, 819-848.	6.9	11

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55	Network Unfolding Map by Vertex-Edge Dynamics Modeling. IEEE Transactions on Neural Networks and Learning Systems, 2018, 29, 405-418.	11.3	11
56	A Network-Based High Level Data Classification Technique. , 2018, , .		11
57	Analyzing the Bills-Voting Dynamics and Predicting Corruption-Convictions Among Brazilian Congressmen Through Temporal Networks. Scientific Reports, 2019, 9, 16754.	3.3	11
58	Generation of composed musical structures through recurrent neural networks based on chaotic inspiration. , 2011, , .		10
59	Detecting and preventing error propagation via competitive learning. Neural Networks, 2013, 41, 70-84.	5.9	10
60	Classifying El Niño-Southern Oscillation Combining Network Science and Machine Learning. IEEE Access, 2020, 8, 55711-55723.	4.2	10
61	Chaotic Synchronization for Scene Segmentation. International Journal of Modern Physics B, 2003, 17, 4387-4394.	2.0	9
62	Limits to chaotic phase synchronization. Europhysics Letters, 2004, 66, 324-330.	2.0	9
63	Data clustering based on complex network community detection. , 2008, , .		9
64	Characterizing chaotic melodies in automatic music composition. Chaos, 2010, 20, 033125.	2.5	9
65	QK-Means: A clustering technique based on community detection and K-Means for deployment of cluster head nodes. , 2012, , .		9
66	Handwritten Data Clustering Using Agents Competition in Networks. Journal of Mathematical Imaging and Vision, 2013, 45, 264-276.	1.3	9
67	Detecting Time Series Periodicity Using Complex Networks. , 2014, , .		9
68	Evaluating link prediction by diffusion processes in dynamic networks. Scientific Reports, 2019, 9, 10833.	3.3	9
69	Attack induced cascading breakdown in complex networks. Journal of the Brazilian Computer Society, 2007, 13, 67-76.	1.3	8
70	Gating-signal propagation by a feed-forward neural motif. Physical Review E, 2013, 88, 012910.	2.1	8
71	Regular graph construction for semi-supervised learning. Journal of Physics: Conference Series, 2014, 490, 012022.	0.4	8
72	A review and comparative analysis of coarsening algorithms on bipartite networks. European Physical Journal: Special Topics, 2021, 230, 2801-2811.	2.6	8

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73	From spatio-temporal data to chronological networks. , 2019, , .		8
74	Pixel Clustering by Adaptive Pixel Moving and Chaotic Synchronization. IEEE Transactions on Neural Networks, 2004, 15, 1176-1185.	4.2	7
75	An oscillatory correlation model of object-based attention. , 2009, , .		7
76	Optimal signal amplification in weighted scale-free networks. Chaos, 2012, 22, 023128.	2.5	7
77	Semi-supervised Learning with Concept Drift Using Particle Dynamics Applied to Network Intrusion Detection Data. , 2013, , .		7
78	Evaluating and Comparing the IGraph Community Detection Algorithms. , 2014, , .		7
79	Data heterogeneity consideration in semi-supervised learning. Expert Systems With Applications, 2016, 45, 234-247.	7.6	7
80	Particle Competition for Multilayer Network Community Detection. , 2019, , .		7
81	Classification Based on the Optimal K-Associated Network. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2009, , 1167-1177.	0.3	7
82	A network of integrate and fire neurons for visual selection. Neurocomputing, 2009, 72, 2198-2208.	5.9	6
83	Model of top-down / bottom-up visual attention for location of salient objects in specific domains. , 2012, , .		6
84	Enhancing Weak Signal Transmission Through a Feedforward Network. IEEE Transactions on Neural Networks and Learning Systems, 2012, 23, 1506-1512.	11.3	6
85	K-associated optimal network for graph embedding dimensionality reduction. , 2014, , .		6
86	Interactive image segmentation using particle competition and cooperation. , 2015, , .		6
87	A New Evaluation Function for Clustering. , 2016, , .		6
88	Network structural optimization based on swarm intelligence for highlevel classification. , 2016, , .		6
89	Analysis of Graph Construction Methods in Supervised Data Classification. , 2018, , .		6
90	Temporal Network Pattern Identification by Community Modelling. Scientific Reports, 2020, 10, 240.	3.3	6

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91	Link Prediction Based on Stochastic Information Diffusion. IEEE Transactions on Neural Networks and Learning Systems, 2022, 33, 3522-3532.	11.3	6
92	A Visual Selection Mechanism Based on a Pulse-Coupled Neural Network. Neural Networks (IJCNN), International Joint Conference on, 2007, , .	0.0	5
93	Visual Selection and Shifting Mechanisms Based on a Network of Chaotic Wilson-Cowan Oscillators. , 2007, , .		5
94	Complex Network Community Detection Based on Swarm Aggregation. , 2008, , .		5
95	Using Katz Centrality to Classify Multiple Pattern Transformations. , 2012, , .		5
96	Classification of multiple observation sets via network modularity. Neural Computing and Applications, 2013, 23, 1923-1929.	5.6	5
97	Attribute-based Decision Graphs for multiclass data classification. , 2013, , .		5
98	Ensemble of complete P-partite graph classifiers for non-stationary environments. , 2013, , .		5
99	Dimensionality reduction with the k-associated optimal graph applied to image classification. , 2013, , .		5
100	Visual Selection with Feature Contrast-Based Inhibition in a Network of Integrate and Fire Neurons. , 2008, , .		4
101	Particle Competition and Cooperation to Prevent Error Propagation from Mislabeled Data in Semi-supervised Learning. , 2012, , .		4
102	Phase-disorder-induced firing activity in excitable neuronal networks with attractive and repulsive coupling. Neural Networks, 2012, 35, 40-45.	5.9	4
103	An Object-Based Visual Selection Model with Bottom-Up and Top-Down Modulations. , 2012, , .		4
104	High Level Classification Totally Based on Complex Networks. , 2013, , .		4
105	A tourist walk approach for internal and external outlier detection. Neurocomputing, 2020, 393, 203-213.	5.9	4
106	Stock market trend detection and automatic decision-making through a network-based classification model. Natural Computing, 2021, 20, 791-804.	3.0	4
107	Time series pattern identification by hierarchical community detection. European Physical Journal: Special Topics, 0, , 1.	2.6	4
108	Top-Down Biasing and Modulation for Object-Based Visual Attention. Lecture Notes in Computer Science, 2013, , 325-332.	1.3	4

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109	Clustered and deep echo state networks for signal noise reduction. Machine Learning, 0, , 1.	5.4	4
110	A network of globally coupled chaotic maps for adaptive multi-resolution image segmentation. , 0, , .		3
111	Pixel Clustering by Using Complex Network Community Detection Technique. , 2007, , .		3
112	Chaotic phase synchronization for visual selection. , 2009, , .		3
113	Particle Competition and Cooperation for Uncovering Network Overlap Community Structure. Lecture Notes in Computer Science, 2011, , 426-433.	1.3	3
114	Using Interacting Forces to Perform Semi-supervised Learning. , 2012, , .		3
115	Detecting and labeling representative nodes for network-based semi-supervised learning. , 2013, , .		3
116	A semi-supervised classification technique based on interacting forces. Neurocomputing, 2014, 127, 43-51.	5.9	3
117	A Network of Neural Oscillators for Fractal Pattern Recognition. Neural Processing Letters, 2016, 44, 149-159.	3.2	3
118	Nature-Inspired Graph Optimization for Dimensionality Reduction. , 2017, , .		3
119	Time Series Trend Detection and Forecasting Using Complex Network Topology Analysis. , 2018, , .		3
120	A Visual Selection Mechanism Based on Network of Chaotic Wilson-Cowan Oscillators. , 2007, , .		2
121	Identifying abnormal nodes in complex networks by using random walk measure. , 2010, , .		2
122	A Network-Based Semi-supervised Outlier Detection Technique Using Particle Competition and Cooperation. , 2013, , .		2
123	Effect of nonidentical signal phases on signal amplification of two coupled excitable neurons. Neurocomputing, 2014, 127, 21-29.	5.9	2
124	Random Walk in Feature-Sample Networks for Semi-supervised Classification. , 2016, , .		2
125	An object-based visual selection framework. Neurocomputing, 2016, 180, 35-54.	5.9	2
126	Network Construction Techniques. , 2016, , 93-132.		2

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127	Structural outlier detection: A tourist walk approach. , 2017, , .		2
128	Computing Burrows-Wheeler Similarity Distributions for String Collections. Lecture Notes in Computer Science, 2018, , 285-296.	1.3	2
129	A Network-Based Model for Optimizing Returns in the Stock Market. , 2019, , .		2
130	Interactive Image Segmentation of Non-contiguous Classes Using Particle Competition and Cooperation. Lecture Notes in Computer Science, 2015, , 203-216.	1.3	2
131	A Pulse-Coupled Neural Network as A Simplified Bottom-Up Visual Attention Model. , 2006, , .		1
132	Associative Memories Using Cellular Neural Networks. , 2007, , .		1
133	Controlled consensus time for community detection in complex networks. , 2011, , .		1
134	Traffic Congestion on Clustered Random Complex Networks. Communications in Computer and Information Science, 2011, , 13-21.	0.5	1
135	Stochastic Competitive Learning Applied to Handwritten Digit and Letter Clustering. , 2011, , .		1
136	Firing Activity Induced by Nonidentical Signal Phases in Two Coupled Excitable Neurons. , 2012, , .		1
137	Preventing Error Propagation in Semi-supervised Learning. Lecture Notes in Computer Science, 2012, , 565-572.	1.3	1
138	Detecting and Preventing Error Propagation via Competitive Learning. Procedia Computer Science, 2012, 13, 192-197.	2.0	1
139	Detecting overlapping structures via network-based competitive learning. , 2012, , .		1
140	A Comparison of Two Purity-Based Algorithms When Applied to Semi-supervised Streaming Data Classification. , 2013, , .		1
141	Pattern-Based Classification via a High Level Approach Using Tourist Walks in Networks. , 2013, , .		1
142	Selecting Nodes with Inhomogeneous Profile for Labeling for Network-Based Semi-supervised Learning. , 2013, , .		1
143	High level data classification based on network entropy. , 2013, , .		1
144	An Object-Based Visual Selection Model Combining Physical Features and Memory. , 2014, , .		1

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145	Recognizing Fractal Patterns Using a Ring of Phase Oscillators. , 2014, , .		1
146	A flocking-like technique to perform semi-supervised learning. , 2014, , .		1
147	Imputation of missing data supported by Complete p-Partite attribute-based Decision Graphs. , 2014, , .		1
148	Case Study of Network-Based Semi-Supervised Learning: Stochastic Competitive-Cooperative Learning in Networks. , 2016, , 291-321.		1
149	Network-Based Unsupervised Learning. , 2016, , 143-180.		1
150	Complex Networks. , 2016, , 15-70.		1
151	Network community detection via iterative edge removal in a flocking-like system. European Physical Journal: Special Topics, 2021, 230, 2843-2855.	2.6	1
152	Echo State Network Performance Analysis Using Non-random Topologies. Communications in Computer and Information Science, 2021, , 133-146.	0.5	1
153	A Purity Measure Based Transductive Learning Algorithm. Lecture Notes in Computer Science, 2013, , 405-412.	1.3	1
154	Advantages of Edge-Centric Collective Dynamics in Machine Learning Tasks. Journal of Applied Nonlinear Dynamics, 2018, 7, 269-285.	0.3	1
155	A dynamically coupled chaotic oscillatory correlation network. , 0, , .		1
156	Scene Segmentation by Chaotic Synchronization and Desynchronization. Lecture Notes in Computer Science, 2000, , 473-481.	1.3	0
157	A biologically motivated paradigm for scene segmentation. , 0, , .		0
158	A dynamical model for multi-scale pixel clustering. , 0, , .		0
159	Chaotic associative recalls for fixed point attractor patterns. , 0, , .		0
160	Lattice Synchronization of Neural Oscillators for Scene Segmentation. , 2006, , .		0
161	A Network of Dynamically Coupled Elements for Pixel Clustering. Neural Networks (IJCNN), International Joint Conference on, 2007, , .	0.0	0
162	Comparison of MTR Escape Design in Different Regions. , 2009, , .		0

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163	Identifying Abnormal Nodes in Protein-Protein Interaction Networks. , 2010, , .		0
164	High Level Classification for Pattern Recognition. , 2011, , .		0
165	Network-based learning through particle competition for data clustering. , 2011, , .		0
166	An Energy Exchanging Mechanism for Data Clustering. , 2012, , .		0
167	Robustness Analysis of Network-Based Semi-supervised Learning Algorithms. , 2012, , .		0
168	Phase-Noise-Induced Resonance in Arrays of Coupled Excitable Neural Models. IEEE Transactions on Neural Networks and Learning Systems, 2013, 24, 1339-1345.	11.3	0
169	Handwritten digits recognition using a high level network-based approach. , 2013, , .		0
170	Investigation of complex dynamics in a recurrent neural network with network community structure and asymmetric weight matrix. , 2013, , .		0
171	Structural Relationships between Spiking Neural Networks and Functional Samples. , 2013, , .		0
172	Rhythmic Pattern Extraction by Community Detection in Complex Networks. , 2014, , .		0
173	Semi-supervised learning by edge domination in complex networks. , 2015, , .		0
174	Semi-Supervised Classification by Particle Competition in Complex Networkâ€™s Edges. International Journal of Pattern Recognition and Artificial Intelligence, 2016, 30, 1660006.	1.2	0
175	Case Study of Network-Based Unsupervised Learning: Stochastic Competitive Learning in Networks. , 2016, , 241-290.		0
176	Network-Based Semi-Supervised Learning. , 2016, , 181-205.		0
177	Improving semantic role labeling using high-level classification in complex networks. , 2017, , .		0
178	Feature Learning in Feature-Sample Networks Using Multi-Objective Optimization. , 2018, , .		0
179	An Optimized Modularity-Based High Level Classification Model. , 2020, , .		0
180	A New Particle Competition Model for Community Detection with Application in Functional Brain Networks. , 2021, , .		0

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181	A Self-organized Network for Data Clustering. Lecture Notes in Computer Science, 2005, , 1189-1198.	1.3	0
182	Stochastic Resonance in Excitable Neuronal System with Phase-Noise. Lecture Notes in Computer Science, 2012, , 304-310.	1.3	0
183	Bias-Guided Random Walk for Network-Based Data Classification. Lecture Notes in Computer Science, 2013, , 375-384.	1.3	0
184	Network-Based Supervised Learning. , 2016, , 133-141.		0
185	Features of edge-centric collective dynamics in machine learning tasks. , 0, , .		0
186	Case Study of Network-Based Supervised Learning: High-Level Data Classification. , 2016, , 207-240.		0
187	Particle Competition for Unbalanced Community Detection in Complex Networks. Lecture Notes in Computer Science, 2020, , 322-336.	1.3	0
188	Predicting the Evolution of COVID-19 Cases and Deaths Through a Correlations-Based Temporal Network. Lecture Notes in Computer Science, 2020, , 397-411.	1.3	0
189	Anomaly Detection in Brazilian Federal Government Purchase Cards Through Unsupervised Learning Techniques. Lecture Notes in Computer Science, 2021, , 19-32.	1.3	0
190	A new network-base high-level data classification methodology (Quipus) by modeling attribute-attribute interactions. , 2020, , .		0
191	Associative Memories Using Cellular Neural Networks. , 2007, , .		0
192	A Visual Selection Mechanism Based on Network of Chaotic Wilson-Cowan Oscillators. , 2007, , .		0
193	Pixel Clustering by Using Complex Network Community Detection Technique. , 2007, , .		0