

# Shigang Chen

## List of Publications by Year in descending order

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173  
papers

5,702  
citations

249298

26  
h-index

150775

59  
g-index

173  
all docs

173  
docs citations

173  
times ranked

3788  
citing authors

#	ARTICLE	IF	CITATIONS
1	Vehicular Fog Computing: A Viewpoint of Vehicles as the Infrastructures. IEEE Transactions on Vehicular Technology, 2016, 65, 3860-3873.	3.9	745
2	An overview of quality of service routing for next-generation high-speed networks: problems and solutions. IEEE Network, 1998, 12, 64-79.	4.9	635
3	Distributed quality-of-service routing in ad hoc networks. IEEE Journal on Selected Areas in Communications, 1999, 17, 1488-1505.	9.7	546
4	A key management scheme for wireless sensor networks using deployment knowledge. , 0, , .		366
5	Identifying the missing tags in a large RFID system. , 2010, , .		145
6	Congestion Avoidance Based on Lightweight Buffer Management in Sensor Networks. IEEE Transactions on Parallel and Distributed Systems, 2006, 17, 934-946.	4.0	114
7	Efficient information collection protocols for sensor-augmented RFID networks. , 2011, , .		106
8	Per-Flow Traffic Measurement Through Randomized Counter Sharing. IEEE/ACM Transactions on Networking, 2012, 20, 1622-1634.	2.6	81
9	Pyramid sketch. Proceedings of the VLDB Endowment, 2017, 10, 1442-1453.	2.1	79
10	Routing With Topology Aggregation in Delay-Bandwidth Sensitive Networks. IEEE/ACM Transactions on Networking, 2004, 12, 17-29.	2.6	75
11	Energy Efficient Algorithms for the RFID Estimation Problem. , 2010, , .		73
12	HeavyKeeper: An Accurate Algorithm for Finding Top-\$k\$ Elephant Flows. IEEE/ACM Transactions on Networking, 2019, 27, 1845-1858.	2.6	65
13	Efficient missing tag detection in RFID systems. , 2011, , .		62
14	Probabilistic missing-tag detection and energy-time tradeoff in large-scale RFID systems. , 2012, , .		62
15	Two Techniques for Fast Computation of Constrained Shortest Paths. IEEE/ACM Transactions on Networking, 2008, 16, 105-115.	2.6	61
16	A novel scheme for protecting receiver's location privacy in wireless sensor networks. IEEE Transactions on Wireless Communications, 2008, 7, 3769-3779.	6.1	61
17	Fit a Compact Spread Estimator in Small High-Speed Memory. IEEE/ACM Transactions on Networking, 2011, 19, 1253-1264.	2.6	58
18	An Automated Signature-Based Approach against Polymorphic Internet Worms. IEEE Transactions on Parallel and Distributed Systems, 2007, 18, 879-892.	4.0	57

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19	Lexicographic Maximin Fairness for Data Collection in Wireless Sensor Networks. IEEE Transactions on Mobile Computing, 2007, 6, 762-776.	3.9	56
20	Missing-Tag Detection and Energy-Time Tradeoff in Large-Scale RFID Systems With Unreliable Channels. IEEE/ACM Transactions on Networking, 2014, 22, 1079-1091.	2.6	54
21	Efficient Protocols for Identifying the Missing Tags in a Large RFID System. IEEE/ACM Transactions on Networking, 2013, 21, 1974-1987.	2.6	52
22	Fast and compact per-flow traffic measurement through randomized counter sharing. , 2011, , .		51
23	Privacy-Preserving Transportation Traffic Measurement in Intelligent Cyber-physical Road Systems. IEEE Transactions on Vehicular Technology, 2016, 65, 3749-3759.	3.9	51
24	Avoid 'void' in geographic routing for data aggregation in sensor networks. International Journal of Ad Hoc and Ubiquitous Computing, 2006, 1, 169.	0.3	49
25	One memory access bloom filters and their generalization. , 2011, , .		45
26	TagSheet: Sleeping Posture Recognition with an Unobtrusive Passive Tag Matrix. , 2019, , .		44
27	Fast RFID grouping protocols. , 2015, , .		42
28	Memory Efficient Protocols for Detecting Node replication attacks in wireless sensor networks. , 2009, , .		41
29	A Scalable Overlay Multicast Architecture for Large-Scale Applications. IEEE Transactions on Parallel and Distributed Systems, 2007, 18, 449-459.	4.0	40
30	Differential estimation in dynamic RFID systems. , 2013, , .		40
31	Fast Bloom Filters and Their Generalization. IEEE Transactions on Parallel and Distributed Systems, 2014, 25, 93-103.	4.0	40
32	Counter Tree: A Scalable Counter Architecture for Per-Flow Traffic Measurement. IEEE/ACM Transactions on Networking, 2017, 25, 1249-1262.	2.6	38
33	Efficient Misplaced-Tag Pinpointing in Large RFID Systems. IEEE Transactions on Parallel and Distributed Systems, 2012, 23, 2094-2106.	4.0	37
34	An efficient tag search protocol in large-scale RFID systems. , 2013, , .		37
35	Estimating the Persistent Spreads in High-Speed Networks. , 2014, , .		36
36	Generalized Energy-Efficient Algorithms for the RFID Estimation Problem. IEEE/ACM Transactions on Networking, 2012, 20, 1978-1990.	2.6	35

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37	Scalable software-defined networking through hybrid switching. , 2017, , .		33
38	Truthful Auction Mechanisms with Performance Guarantee in Secondary Spectrum Markets. IEEE Transactions on Mobile Computing, 2015, 14, 1315-1329.	3.9	31
39	Cardinality Estimation for Elephant Flows: A Compact Solution Based on Virtual Register Sharing. IEEE/ACM Transactions on Networking, 2017, 25, 3738-3752.	2.6	31
40	You Can Drop but You Can't Hide: $\epsilon$ -persistent Spread Estimation in High-speed Networks. , 2018, , .		31
41	Minimizing the Maximum Firewall Rule Set in a Network with Multiple Firewalls. IEEE Transactions on Computers, 2010, 59, 218-230.	2.4	30
42	Generalized Sketch Families for Network Traffic Measurement. Proceedings of the ACM on Measurement and Analysis of Computing Systems, 2019, 3, 1-34.	1.4	30
43	An efficient protocol for RFID multigroup threshold-based classification. , 2013, , .		27
44	Counter Tree: A Scalable Counter Architecture for Per-Flow Traffic Measurement. , 2015, , .		27
45	Better with fewer bits: Improving the performance of cardinality estimation of large data streams. , 2017, , .		26
46	Achieving High Scalability Through Hybrid Switching in Software-Defined Networking. IEEE/ACM Transactions on Networking, 2018, 26, 618-632.	2.6	26
47	Trajectory similarity clustering based on multi-feature distance measurement. Applied Intelligence, 2019, 49, 2315-2338.	3.3	26
48	Efficient RFID Grouping Protocols. IEEE/ACM Transactions on Networking, 2016, 24, 3177-3190.	2.6	25
49	Tag-Ordering Polling Protocols in RFID Systems. IEEE/ACM Transactions on Networking, 2016, 24, 1548-1561.	2.6	25
50	An Efficient $\epsilon$ -Persistent Spread Estimator for Traffic Measurement in High-Speed Networks. IEEE/ACM Transactions on Networking, 2020, 28, 1463-1476.	2.6	25
51	Randomized error removal for online spread estimation in data streaming. Proceedings of the VLDB Endowment, 2021, 14, 1040-1052.	2.1	25
52	Joint Optimization of Flow Table and Group Table for Default Paths in SDNs. IEEE/ACM Transactions on Networking, 2018, 26, 1837-1850.	2.6	24
53	QoS information approximation for aggregated networks. , 2004, , .		23
54	A time-efficient information collection protocol for large-scale RFID systems. , 2012, , .		23

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55	Efficient Information Sampling in Multi-Category RFID Systems. IEEE/ACM Transactions on Networking, 2019, 27, 159-172.	2.6	23
56	Online Spread Estimation with Non-duplicate Sampling. , 2020, , .		22
57	Spread Estimation With Non-Duplicate Sampling in High-Speed Networks. IEEE/ACM Transactions on Networking, 2021, 29, 2073-2086.	2.6	22
58	Privacy-Preserving Multi-Point Traffic Volume Measurement Through Vehicle-to-Infrastructure Communications. IEEE Transactions on Vehicular Technology, 2015, 64, 5619-5630.	3.9	21
59	Using Analog Network Coding to Improve the RFID Reading Throughput. , 2010, , .		19
60	Scan detection in high-speed networks based on optimal dynamic bit sharing. , 2011, , .		19
61	A dynamic Proof of Retrievability (PoR) scheme with $O(\log n)$ complexity. , 2012, , .		19
62	An Energy-Efficient Strategy for Secondary Users in Cooperative Cognitive Radio Networks for Green Communications. IEEE Journal on Selected Areas in Communications, 2016, 34, 3195-3207.	9.7	19
63	Lightweight Anonymous Authentication Protocols for RFID Systems. IEEE/ACM Transactions on Networking, 2017, 25, 1475-1488.	2.6	19
64	Estimating Cardinality for Arbitrarily Large Data Stream With Improved Memory Efficiency. IEEE/ACM Transactions on Networking, 2020, 28, 433-446.	2.6	19
65	Efficient pinpointing of misplaced tags in large RFID systems. , 2011, , .		18
66	Highly Compact Virtual Active Counters for Per-flow Traffic Measurement. , 2018, , .		18
67	Monitoring Bodily Oscillation With RFID Tags. IEEE Internet of Things Journal, 2019, 6, 3840-3854.	5.5	18
68	Efficient file search in non-DHT P2P networks. Computer Communications, 2008, 31, 304-317.	3.1	17
69	Maximizing Lifetime Vector in Wireless Sensor Networks. IEEE/ACM Transactions on Networking, 2013, 21, 1187-1200.	2.6	17
70	MS-Based Metabonomic Profiling Displayed Differing Effects of Borna Disease Virus Natural Strain Hu-H1 and Laboratory Strain V Infection in Rat Cortical Neurons. International Journal of Molecular Sciences, 2015, 16, 19347-19368.	1.8	17
71	ACOM: Any-source Capacity-constrained Overlay Multicast in Non-DHT P2P Networks. IEEE Transactions on Parallel and Distributed Systems, 2007, 18, 1188-1201.	4.0	16
72	Stateful DDoS attacks and targeted filtering. Journal of Network and Computer Applications, 2007, 30, 823-840.	5.8	16

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73	Unknown-Target Information Collection in Sensor-Enabled RFID Systems. IEEE/ACM Transactions on Networking, 2014, 22, 1164-1175.	2.6	16
74	Highly Compact Virtual Counters for Per-Flow Traffic Measurement through Register Sharing. , 2016, , .		16
75	DAW: A Distributed Antiworm System. IEEE Transactions on Parallel and Distributed Systems, 2007, 18, 893-906.	4.0	15
76	Estimating the Cardinality of a Mobile Peer-to-Peer Network. IEEE Journal on Selected Areas in Communications, 2013, 31, 359-368.	9.7	15
77	ETAP: Enable Lightweight Anonymous RFID Authentication with O(1) Overhead. , 2015, , .		15
78	Per-flow counting for big network data stream over sliding windows. , 2017, , .		15
79	Chaac: Real-Time and Fine-Grained Rain Detection and Measurement Using Smartphones. IEEE Internet of Things Journal, 2019, 6, 997-1009.	5.5	15
80	Spreader Classification Based on Optimal Dynamic Bit Sharing. IEEE/ACM Transactions on Networking, 2013, 21, 817-830.	2.6	14
81	Point-to-Point Traffic Volume Measurement through Variable-Length Bit Array Masking in Vehicular Cyber-Physical Systems. , 2015, , .		14
82	When Bloom Filters Are No Longer Compact: Multi-Set Membership Lookup for Network Applications. IEEE/ACM Transactions on Networking, 2016, 24, 3326-3339.	2.6	14
83	A UHF RFID-Based System for Children Tracking. IEEE Internet of Things Journal, 2018, 5, 5055-5064.	5.5	14
84	Persistent Traffic Measurement through Vehicle-to-Infrastructure Communications in Cyber-Physical Road Systems. IEEE Transactions on Mobile Computing, 2019, 18, 1616-1630.	3.9	14
85	Robust Task Offloading in Dynamic Edge Computing. IEEE Transactions on Mobile Computing, 2023, 22, 500-514.	3.9	14
86	SoMR: A scalable distributed QoS multicast routing protocol. Journal of Parallel and Distributed Computing, 2008, 68, 137-149.	2.7	13
87	Inside the Permutation-Scanning Worms: Propagation Modeling and Analysis. IEEE/ACM Transactions on Networking, 2010, 18, 858-870.	2.6	13
88	Privacy preserving origin-destination flow measurement in vehicular cyber-physical systems. , 2013, , .		13
89	Pandaka: A lightweight cipher for RFID systems. , 2014, , .		13
90	Searching for Widespread Events in Large Networked Systems by Cooperative Monitoring. , 2015, , .		13

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91	An Efficient Protocol for RFID Multigroup Threshold-Based Classification Based on Sampling and Logical Bitmap. IEEE/ACM Transactions on Networking, 2016, 24, 397-407.	2.6	13
92	SPATH: Finding the Safest Walking Path in Smart Cities. IEEE Transactions on Vehicular Technology, 2019, 68, 7071-7079.	3.9	13
93	Privacy-Preserving Point-to-Point Transportation Traffic Measurement through Bit Array Masking in Intelligent Cyber-physical Road Systems. , 2013, , .		12
94	An Efficient Anonymous Authentication Protocol for RFID Systems Using Dynamic Tokens. , 2015, , .		12
95	Lightweight Flow Distribution for Collaborative Traffic Measurement in Software Defined Networks. , 2019, , .		12
96	Estimating Cardinality of Arbitrary Expression of Multiple Tag Sets in a Distributed RFID System. IEEE/ACM Transactions on Networking, 2019, 27, 748-762.	2.6	11
97	On Optimal Deadlock Detection Scheduling. IEEE Transactions on Computers, 2006, 55, 1178-1187.	2.4	10
98	State aggregation of large network domains. Computer Communications, 2007, 30, 873-885.	3.1	10
99	Large-Scale VM Placement with Disk Anti-Colocation Constraints Using Hierarchical Decomposition and Mixed Integer Programming. IEEE Transactions on Parallel and Distributed Systems, 2017, 28, 1361-1374.	4.0	10
100	DBF: A general framework for anomaly detection in RFID systems. , 2017, , .		10
101	Short-Term Memory Sampling for Spread Measurement in High-Speed Networks. , 2022, , .		10
102	An internet-worm early warning system. , 0, , .		9
103	Resilient Capacity-Aware Multicast Based on Overlay Networks. , 0, , .		9
104	Approximately-perfect hashing: Improving network throughput through efficient off-chip routing table lookup. , 2011, , .		9
105	Missing-Tag Detection with Presence of Unknown Tags. , 2018, , .		9
106	Privacy-Preserving Estimation of $k$ -Persistent Traffic in Vehicular Cyber-Physical Systems. IEEE Internet of Things Journal, 2019, 6, 8296-8309.	5.5	9
107	Pose Sensing With a Single RFID Tag. IEEE/ACM Transactions on Networking, 2020, 28, 2023-2036.	2.6	9
108	Missing-Tag Detection With Unknown Tags. IEEE/ACM Transactions on Networking, 2020, 28, 1297-1310.	2.6	9

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109	Detecting Stealthy Spreaders by Random Aging Streaming Filters. IEICE Transactions on Communications, 2011, E94-B, 2274-2281.	0.4	9
110	Collision-Aware Churn Estimation in Large-Scale Dynamic RFID Systems. IEEE/ACM Transactions on Networking, 2017, 25, 392-405.	2.6	9
111	A new perspective in defending against DDoS. , 0, , .		8
112	Load balancing with multiple hash functions in peer-to-peer networks. , 2006, , .		8
113	Fast routing table lookup based on deterministic multi-hashing. , 2010, , .		8
114	Identifying State-Free Networked Tags. IEEE/ACM Transactions on Networking, 2017, , 1-14.	2.6	8
115	Persistent Traffic Measurement Through Vehicle-to-Infrastructure Communications. , 2017, , .		8
116	Super Spreader Identification Using Geometric-Min Filter. IEEE/ACM Transactions on Networking, 2022, 30, 299-312.	2.6	8
117	Glutamate and Lipid Metabolic Perturbation in the Hippocampi of Asymptomatic Borna Disease Virus-Infected Horses. PLoS ONE, 2014, 9, e99752.	1.1	8
118	Virtual Filter for Non-duplicate Sampling. , 2021, , .		8
119	Identifying State-Free Networked Tags. , 2015, , .		7
120	ABC: A practicable sketch framework for non-uniform multisets. , 2017, , .		7
121	Session-Based Cooperation in Cognitive Radio Networks: A Network-Level Approach. IEEE/ACM Transactions on Networking, 2018, 26, 685-698.	2.6	7
122	A Protocol for Simultaneously Estimating Moments and Popular Groups in a Multigroup RFID System. IEEE/ACM Transactions on Networking, 2019, 27, 143-158.	2.6	7
123	Noise Measurement and Removal for Data Streaming Algorithms with Network Applications. , 2021, , .		7
124	ActiveKeeper: An Accurate and Efficient Algorithm for Finding Top-k Elephant Flows. IEEE Communications Letters, 2021, 25, 2545-2549.	2.5	7
125	A New Data Collection Technique for Preserving Privacy. Journal of Privacy and Confidentiality, 2017, 7, 99-129.	1.1	7
126	MVP: An Efficient Anonymous E-Voting Protocol. , 2016, , .		6

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127	Efficient anonymous category-level joint Tag estimation. , 2016, , .		6
128	Deploying default paths by joint optimization of flow table and group table in SDNs. , 2017, , .		6
129	Pyramid Family: Generic Frameworks for Accurate and Fast Flow Size Measurement. IEEE/ACM Transactions on Networking, 2022, 30, 586-600.	2.6	6
130	Fast and Accurate Cardinality Estimation by Self-Morphing Bitmaps. IEEE/ACM Transactions on Networking, 2022, 30, 1674-1688.	2.6	6
131	Detecting Internet worms at early stage. IEEE Journal on Selected Areas in Communications, 2005, 23, 2003-2012.	9.7	5
132	End-to-end maxmin fairness in multihop wireless networks: Theory and protocol. Journal of Parallel and Distributed Computing, 2012, 72, 462-474.	2.7	5
133	Highly compact virtual maximum likelihood sketches for counting big network data. , 2014, , .		5
134	Collusion Resistant Multi-Matrix Masking for Privacy-Preserving Data Collection. , 2017, 2017, 1-7.		5
135	Using Integer Programming for Workflow Scheduling in the Cloud. , 2017, , .		5
136	Anonymous Temporal-Spatial Joint Estimation at Category Level Over Multiple Tag Sets. , 2018, , .		5
137	A Distributed Hybrid Scheme for Unstructured Peer-to-Peer Networks. , 2006, , .		4
138	Achieving Global End-to-End Maxmin in Multihop Wireless Networks. , 2008, , .		4
139	An efficient incentive scheme with a distributed authority infrastructure in peer-to-peer networks. Journal of Parallel and Distributed Computing, 2012, 72, 1741-1752.	2.7	4
140	Adaptive Joint Estimation Protocol for Arbitrary Pair of Tag Sets in a Distributed RFID System. IEEE/ACM Transactions on Networking, 2017, 25, 2670-2685.	2.6	4
141	MAC-layer Time Fairness across Multiple Wireless LANs. , 2010, , .		3
142	Guided multiple hashing: Achieving near perfect balance for fast routing lookup. , 2013, , .		3
143	Efficient Hierarchical Traffic Measurement in Software-Defined Datacenter Networks. , 2017, , .		3
144	Achieving Strong Privacy in Online Survey. , 2017, 2017, .		3

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145	Collision-resistant Communication Model for State-free Networked Tags. , 2019, , .		3
146	Indirect Multi-Mapping for Burstiness Management in Software Defined Networks. IEEE/ACM Transactions on Networking, 2021, 29, 2059-2072.	2.6	3
147	Collaborative Validation of Public-Key Certificates for IoT by Distributed Caching. IEEE/ACM Transactions on Networking, 2020, , 1-14.	2.6	3
148	On Outsourcing Artificial Neural Network Learning of Privacy-Sensitive Medical Data to the Cloud. , 2021, 2021, 381-385.		3
149	Virtual Filter for Non-Duplicate Sampling With Network Applications. IEEE/ACM Transactions on Networking, 2022, 30, 2818-2833.	2.6	3
150	Two techniques for fast computation of constrained shortest paths. , 0, , .		2
151	A Probabilistic Approach for Improving TCP Fairness across Multiple Contending WLANs. , 2010, , .		2
152	Demonstrating Scalability and Efficiency of Pack-centric Resource Management for Cloud. , 2016, , .		2
153	Efficient Anonymous Temporal-Spatial Joint Estimation at Category Level Over Multiple Tag Sets With Unreliable Channels. IEEE/ACM Transactions on Networking, 2020, 28, 2174-2187.	2.6	2
154	Probabilistic Data Prefetching for Data Transportation in Smart Cities. IEEE Internet of Things Journal, 2022, 9, 1655-1666.	5.5	2
155	Toward Differential Privacy for Traffic Measurement in Vehicular Cyber-Physical Systems. IEEE Transactions on Industrial Informatics, 2022, 18, 4078-4087.	7.2	2
156	On the Performance Regularity of Web Servers. World Wide Web, 2004, 7, 241-258.	2.7	1
157	Online identification of multi-attribute high-volume traffic aggregates through sampling. , 0, , .		1
158	New adaptive protocols for fine-level end-to-end rate control in wireless networks. Network Protocols (ICNP), Proceedings of the IEEE International Conference on, 2008, , .	0.0	1
159	Idle-Slot Recycling in a Collision-Free Real-Time MAC Protocol. , 2008, , .		1
160	A Novel Solution for End-to-End Fairness Problem in Wireless Mesh Networks. , 2008, , .		1
161	Applying Triple-Matrix Masking for Privacy Preserving Data Collection and Sharing in HIV Studies. Current HIV Research, 2016, 14, 121-129.	0.2	1
162	An Experimental Study on the Impact of Execution Location in Edge-Cloud Computing. , 2020, , .		1

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163	Generalized Sketch Families for Network Traffic Measurement. Performance Evaluation Review, 2020, 48, 63-64.	0.4	1
164	A peer-to-peer network positioning architecture. , 0, , .		0
165	Analysis of Maximum Executable Length for Detecting Text-Based Malware. , 2008, , .		0
166	Random P2P network with $O(d)$ routing distance. , 2008, , .		0
167	PSON: A scalable P2P file sharing system with efficient complex query support. Peer-to-Peer Networking and Applications, 2011, 4, 3-22.	2.6	0
168	An incrementally deployable path address scheme. Journal of Parallel and Distributed Computing, 2012, 72, 1215-1225.	2.7	0
169	Pack Up Cloud: Recursive Datacenter Resource Management and Experimental Studies. , 2015, , .		0
170	Threshold-Based Widespread Event Detection. , 2019, 2019, 399-408.		0
171	Scalable and Balanced Policy Enforcement through Hybrid SDN-Label Switching. , 2019, , .		0
172	Accurate Hierarchical Traffic Measurement in Datacenters Through Differentiated Memory Allocation. , 2020, , .		0
173	LSE: A Learning-based Per-flow Spread Estimation Framework for Network Data Streams. , 2022, , .		0