Mung Chiang

List of Publications by Year
in descending order

148 papers	11,065 citations	76196 40 h-index	79541 73 g-index
151 all docs	151 docs citations	151 times ranked	7760 citing authors

#	Article	IF	Citations
1	Fog and IoT: An Overview of Research Opportunities. IEEE Internet of Things Journal, 2016, 3, 854-864.	5.5	1,740
2	A tutorial on decomposition methods for network utility maximization. IEEE Journal on Selected Areas in Communications, 2006, 24, 1439-1451.	9.7	1,315
3	Layering as Optimization Decomposition: A Mathematical Theory of Network Architectures. Proceedings of the IEEE, 2007, 95, 255-312.	16.4	1,065
4	Power Control By Geometric Programming. IEEE Transactions on Wireless Communications, 2007, 6, 2640-2651.	6.1	713
5	Auction-Based Resource Allocation for Cooperative Communications. IEEE Journal on Selected Areas in Communications, 2008, 26, 1226-1237.	9.7	244
6	An Axiomatic Theory of Fairness in Network Resource Allocation. , 2010, , .		234
7	Alternative Distributed Algorithms for Network Utility Maximization: Framework and Applications. IEEE Transactions on Automatic Control, 2007, 52, 2254-2269.	3.6	233
8	A game-theoretic approach to energy-efficient power control in multicarrier CDMA systems. IEEE Journal on Selected Areas in Communications, 2006, 24, 1115-1129.	9.7	232
9	Geometric Programming for Communication Systems. Foundations and Trends in Communications and Information Theory, 2005, 2, 1-154.	2.4	227
10	Balancing transport and physical Layers in wireless multihop networks: jointly optimal congestion control and power control. IEEE Journal on Selected Areas in Communications, 2005, 23, 104-116.	9.7	195
11	Optimized Day-Ahead Pricing for Smart Grids with Device-Specific Scheduling Flexibility. IEEE Journal on Selected Areas in Communications, 2012, 30, 1075-1085.	9.7	172
12	Learning about Social Learning in MOOCs: From Statistical Analysis to Generative Model. IEEE Transactions on Learning Technologies, 2014, 7, 346-359.	2.2	157
13	On unbounded path-loss models: effects of singularity on wireless network performance. IEEE Journal on Selected Areas in Communications, 2009, 27, 1078-1092.	9.7	154
14	Autonomous Spectrum Balancing for Digital Subscriber Lines. IEEE Transactions on Signal Processing, 2007, 55, 4241-4257.	3.2	152
15	Maximizing Sum Rate and Minimizing MSE on Multiuser Downlink: Optimality, Fast Algorithms and Equivalence via Max-min SINR. IEEE Transactions on Signal Processing, 2011, 59, 6127-6143.	3.2	145
16	QoS and fairness constrained convex optimization of resource allocation for wireless cellular and ad hoc networks. , 0, , .		143
17	Distributed Uplink Power Control for Optimal SIR Assignment in Cellular Data Networks. IEEE/ACM Transactions on Networking, 2008, 16, 1420-1433.	2.6	138
18	Fast Algorithms and Performance Bounds for Sum Rate Maximization in Wireless Networks. IEEE/ACM Transactions on Networking, 2013, 21, 706-719.	2.6	136

#	ARTICLE	IF	CITATIONS
19	Distributed Rate Allocation for Inelastic Flows. IEEE/ACM Transactions on Networking, 2007, 15, 1240-1253.	2.6	120
20	Multiresource Allocation: Fairness–Efficiency Tradeoffs in a Unifying Framework. IEEE/ACM Transactions on Networking, 2013, 21, 1785-1798.	2.6	117
21	Utility-optimal random-access control. IEEE Transactions on Wireless Communications, 2007, 6, 2741-2751.	6.1	111
22	Fast-Convergent Federated Learning. IEEE Journal on Selected Areas in Communications, 2021, 39, 201-218.	9.7	109
23	Price-based distributed algorithms for rate-reliability tradeoff in network utility maximization. IEEE Journal on Selected Areas in Communications, 2006, 24, 962-976.	9.7	108
24	Multi-resource allocation: Fairness-efficiency tradeoffs in a unifying framework. , 2012, , .		105
25	MOOC performance prediction via clickstream data and social learning networks. , 2015, , .		105
26	Optimization Based Rate Control for Multicast with Network Coding. , 2007, , .		96
27	Optimal Power Allocation for Distributed Detection Over MIMO Channels in Wireless Sensor Networks. IEEE Transactions on Signal Processing, 2008, 56, 4124-4140.	3.2	96
28	Joint Source Adaptation and Resource Allocation for Multi-User Wireless Video Streaming. IEEE Transactions on Circuits and Systems for Video Technology, 2008, 18, 582-595.	5.6	96
29	Channel Capacity and State Estimation for State-Dependent Gaussian Channels. IEEE Transactions on Information Theory, 2005, 51, 1486-1495.	1.5	91
30	To layer or not to layer: balancing transport and physical layers in wireless multihop networks. , 0, , .		90
31	Jointly optimal congestion and contention control based on network utility maximization. IEEE Communications Letters, 2006, 10, 216-218.	2.5	90
32	Stochastic network utility maximisation—a tribute to Kelly's paper published in this journal a decade ago. European Transactions on Telecommunications, 2008, 19, 421-442.	1.2	89
33	Pricing under Constraints in Access Networks: Revenue Maximization and Congestion Management. , 2010, , .		84
34	Geometric Programming Duals of Channel Capacity and Rate Distortion. IEEE Transactions on Information Theory, 2004, 50, 245-258.	1.5	77
35	From Technological Networks to Social Networks. IEEE Journal on Selected Areas in Communications, 2013, 31, 548-572.	9.7	76
36	Mining MOOC Clickstreams: Video-Watching Behavior vs. In-Video Quiz Performance. IEEE Transactions on Signal Processing, 2016, 64, 3677-3692.	3.2	75

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37	Quantifying Political Leaning from Tweets, Retweets, and Retweeters. IEEE Transactions on Knowledge and Data Engineering, 2016, 28, 2158-2172.	4.0	72
38	Equilibrium of Heterogeneous Congestion Control: Existence and Uniqueness. IEEE/ACM Transactions on Networking, 2007, 15, 824-837.	2.6	69
39	Behavior-Based Grade Prediction for MOOCs via Time Series Neural Networks. IEEE Journal on Selected Topics in Signal Processing, 2017, , 1-1.	7.3	66
40	Pricing-Based Decentralized Spectrum Access Control in Cognitive Radio Networks. IEEE/ACM Transactions on Networking, 2013, 21, 522-535.	2.6	62
41	Balancing supply and demand of bandwidth in wireless cellular networks: utility maximization over powers and rates. , 0, , .		60
42	The Impact of Stochastic Noisy Feedback on Distributed Network Utility Maximization. IEEE Transactions on Information Theory, 2008, 54, 645-665.	1.5	59
43	Scheduling and Resource Allocation for SVC Streaming Over OFDM Downlink Systems. IEEE Transactions on Circuits and Systems for Video Technology, 2009, 19, 1549-1555.	5.6	57
44	Device Sampling for Heterogeneous Federated Learning: Theory, Algorithms, and Implementation. , 2021, , .		51
45	Utility-optimal random access: Reduced complexity, fast convergence, and robust performance. IEEE Transactions on Wireless Communications, 2009, 8, 898-911.	6.1	48
46	Revenue sharing among ISPs in two-sided markets. , 2011, , .		48
47	Individualization for Education at Scale: MIIC Design and Preliminary Evaluation. IEEE Transactions on Learning Technologies, 2015, 8, 136-148.	2.2	48
48	Utility-optimal random access without message passing. IEEE Transactions on Wireless Communications, 2009, 8, 1073-1079.	6.1	46
49	Time-Dependent Broadband Pricing: Feasibility and Benefits. , 2011, , .		46
50	HetNets Selection by Clients: Convergence, Efficiency, and Practicality. IEEE/ACM Transactions on Networking, 2017, 25, 406-419.	2.6	46
51	Throughput of random access without message passing. , 2008, , .		44
52	Power Control for Cognitive Radio Networks: Axioms, Algorithms, and Analysis. IEEE/ACM Transactions on Networking, 2012, 20, 878-891.	2.6	44
53	Writing on colored paper. , 0, , .		42
54	Early Detection Prediction of Learning Outcomes in Online Short-Courses via Learning Behaviors. IEEE Transactions on Learning Technologies, 2019, 12, 44-58.	2.2	37

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55	Nonconvex Optimization for Communication Networks. Advances in Mechanics and Mathematics, 2009, , 137-196.	0.2	32
56	AMUSE: Empowering users for cost-aware offloading with throughput-delay tradeoffs. , 2013, , .		31
57	Layering as Optimization Decomposition: Questions and Answers. , 2006, , .		29
58	Equilibrium of Heterogeneous Congestion Control: Optimality and Stability. IEEE/ACM Transactions on Networking, 2010, 18, 844-857.	2.6	28
59	Optimal Rate-Reliability-Delay Tradeoff in Networks with Composite Links. IEEE Transactions on Communications, 2009, 57, 1390-1401.	4.9	26
60	Average Message Delivery Time for Small-World Networks in the Continuum Limit. IEEE Transactions on Information Theory, 2010, 56, 4447-4470.	1.5	26
61	Internet of Things Session Management Over LTEâ€"Balancing Signal Load, Power, and Delay. IEEE Internet of Things Journal, 2016, 3, 339-353.	5.5	26
62	Elastic service availability: utility framework and optimal provisioning. IEEE Journal on Selected Areas in Communications, 2008, 26, 55-65.	9.7	25
63	Resource Allocation over Network Dynamics without Timescale Separation. , 2010, , .		25
64	Making 802.11 DCF Near-Optimal: Design, Implementation, and Evaluation. IEEE/ACM Transactions on Networking, 2016, 24, 1745-1758.	2.6	25
65	Implementing utility-optimal CSMA. , 2009, , .		24
66	Distributed Nonconvex Power Control using Gibbs Sampling. IEEE Transactions on Communications, 2012, 60, 3886-3898.	4.9	24
67	Resource allocation for QoS provisioning in wireless ad hoc networks. , 0, , .		23
68	A Survey of Client-Controlled HetNets for 5G. IEEE Access, 2017, 5, 2842-2854.	2.6	23
69	Distributed Optimization of Coupled Systems With Applications to Network Utility Maximization. , 0, , .		22
70	Adaptive Fog-Based Output Security for Augmented Reality. , 2018, , .		22
71	Cooperative content distribution and traffic engineering in an ISP network. Performance Evaluation Review, 2009, 37, 239-250.	0.4	22
72	Reverse Engineering MAC. , 0, , .		21

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73	Solving nonconvex power control problems in wireless networks: low SIR regime and distributed algorithms. , 2005, , .		20
74	Congestion Control in Networks with Delay Sensitive Traffic. , 2007, , .		20
75	Distributed robust optimization (DRO), part I: framework and example. Optimization and Engineering, 2014, 15, 35-67.	1.3	20
76	Virtualized Control Over Fog: Interplay Between Reliability and Latency. IEEE Internet of Things Journal, 2018, 5, 5030-5045.	5.5	20
77	On the Efficiency of Social Recommender Networks. IEEE/ACM Transactions on Networking, 2016, 24, 2512-2524.	2.6	19
78	Social learning networks: Efficiency optimization for MOOC forums. , 2016, , .		18
79	Distributed Utility Maximization for Network Coding Based Multicasting: A Critical Cut Approach. , 0, , .		17
80	Customized Data Plans for Mobile Users: Feasibility and Benefits of Data Trading. IEEE Journal on Selected Areas in Communications, 2017, 35, 949-963.	9.7	17
81	Optimal and suboptimal finger selection algorithms for MMSE rake receivers in impulse radio ultra-wideband systems. , 0, , .		16
82	Delay of Social Search on Small-World Graphs. Journal of Mathematical Sociology, 2014, 38, 1-46.	0.6	14
83	On the Efficiency of Online Social Learning Networks. IEEE/ACM Transactions on Networking, 2018, 26, 2076-2089.	2.6	14
84	The value of clustering in distributed estimation for sensor networks. , 0, , .		13
85	A Genetic Algorithm Based Finger Selection Scheme for UWB MMSE Rake Receivers. , 0, , .		13
86	Re-examining Probabilistic Versus Deterministic Key Management. , 2007, , .		13
87	Stability, Fairness, and Performance: A Flow-Level Study on Nonconvex and Time-Varying Rate Regions. IEEE Transactions on Information Theory, 2009, 55, 3437-3456.	1.5	12
88	Personalized Thread Recommendation for MOOC Discussion Forums. Lecture Notes in Computer Science, 2019, , 725-740.	1.0	12
89	Characterizing task completion latencies in multi-point multi-quality fog computing systems. Computer Networks, 2020, 181, 107526.	3.2	12
90	Equilibrium of Heterogeneous Congestion Control Protocols. , 2006, , .		11

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91	Globally Optimal Distributed Power Control for Nonconcave Utility Maximization. , 2010, , .		11
92	QoS-revenue tradeoff with time-constrained ISP pricing. , 2010, , .		11
93	Selfish Random Access over Wireless Channels with Multipacket Reception. IEEE Journal on Selected Areas in Communications, 2012, 30, 138-152.	9.7	11
94	Content-Aware Distortion-Fair Video Streaming in Networks. , 2008, , .		10
95	Energy Conservation and Interference Mitigation: From Decoupling Property to Win-Win Strategy. IEEE Transactions on Wireless Communications, 2011, 10, 3943-3955.	6.1	10
96	Minimizing Age-of-Information in Heterogeneous Multi-Channel Systems. , 2021, , .		10
97	Layering As Optimization Decomposition: Current Status and Open Issues. , 2006, , .		9
98	Auction-based resource allocation for multi-relay asynchronous cooperative networks. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	9
99	Robust and QoS constrained optimization of power control in wireless cellular networks. , 0, , .		8
100	Alternative decompositions and distributed algorithms for network utility maximization. , 2005, , .		8
101	Energy-Efficient Video Transmission Scheduling for Wireless Peer-to-Peer Live Streaming. , 2009, , .		8
102	Energy Efficient Assisted GPS Measurement and Path Reconstruction for People Tracking. , 2010, , .		8
103	Tradeoff between message and state information rates. , 0, , .		7
104	Distributed network control through sum product algorithm on graphs. , 0, , .		7
105	Power Allocation in Distributed Detection with Wireless Sensor Networks. , 2006, , .		7
106	Stability and Benefits of Suboptimal Utility Maximization. IEEE/ACM Transactions on Networking, 2011, 19, 1194-1207.	2.6	7
107	Content aware optimization for video delivery over WCDMA. Eurasip Journal on Wireless Communications and Networking, 2012, 2012, .	1.5	7
108	Decomposing Data Analytics in Fog Networks. , 2017, , .		7

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109	Joint Beamforming and Power Control for Optimal SIR Assignment in Cellular Uplinks. , 2007, , .		6
110	Proxy-P2P Streaming under the Microscope: Fine-Grain Measurement of a Configurable Platform. , 2010, , .		6
111	Throughput and Delay Performance of DSL Broadband Access with Cross-Layer Dynamic Spectrum Management. IEEE Transactions on Communications, 2012, 60, 2700-2711.	4.9	6
112	Model Predictive Compression for Drone Video Analytics. , 2018, , .		6
113	Efficient nonlinear optimizations of queuing systems. , 0, , .		5
114	Equilibrium of Heterogeneous Congestion Control Protocols. , 0, , .		5
115	Layering As Optimization Decomposition: Framework and Examples. , 0, , .		5
116	Optimal Transmission Scheduling for Scalable Wireless Video Broadcast with Rateless Erasure Correction Code. , 2009, , .		5
117	Network resource allocation for competing multiple description transmissions. IEEE Transactions on Communications, 2010, 58, 1493-1504.	4.9	5
118	Guest Editorial: Smart Data Pricing for Next-Generation Networks. IEEE Journal on Selected Areas in Communications, 2020, 38, 641-644.	9.7	5
119	Distributed wide-area traffic management for cloud services. Performance Evaluation Review, 2012, 40, 409-410.	0.4	4
120	Convex optimization of output link scheduling and active queue management in QoS constrained packet switches. , 0, , .		3
121	Distributed algorithms for optimal rate-reliability tradeoff in networks. , 2005, , .		3
122	Video transmission scheduling for peer-to-peer live streaming systems. , 2008, , .		3
123	Multi-Path Key Establishment against REM Attacks in Wireless Ad Hoc Networks. , 2009, , .		3
124	Online Content Trading: Sharing Mart System and Auction Experiments. , 2010, , .		3
125	Measuring fairness: Axioms and applications. , 2011, , .		3
126	Iterative resource pooling for bandwidth allocation in TDM-PON: algorithm, convergence and experimental evaluation. Photonic Network Communications, 2012, 24, 138-150.	1.4	3

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127	Corrections to "Link-State Routing With Hop-By-Hop Forwarding Can Achieve Optimal Traffic Engineering"[Dec 11 1717-1730]. IEEE/ACM Transactions on Networking, 2015, 23, 1702-1703.	2.6	3
128	Optimal sleeping: models and experiments for energy-delay tradeoff. International Journal of Systems Science: Operations and Logistics, 2017, 4, 356-371.	2.0	3
129	Personalized augmented reality via fog-based imitation learning. , 2019, , .		3
130	Stability of congestion control schemes with delay sensitive traffic. , 2008, , .		2
131	Energy conservation and interference mitigation: From decoupling property to win-win strategy. , 2010, , .		2
132	ProCMotive. , 2018, 2, 1-31.		2
133	On systematic cross-layer design for ad hoc networks. , 2008, , .		1
134	Expected message delivery time for small-world networks in the continuum limit. , 2008, , .		1
135	Congestion location detection: Methodology, algorithm, and performance. , 2009, , .		1
136	Intelligent Video Network Engineering with Distributed Optimization: Two Case Studies. Studies in Computational Intelligence, 2010, , 253-290.	0.7	1
137	Demo: Discover, Provision, and Orchestration of Machine Learning Inference Services in Heterogeneous Edge. , 2021, , .		1
138	Constrained optimization of neural network architecture. , 0, , .		0
139	Convex optimization of antenna power control for wireless cellular systems. , 0, , .		0
140	LORA: robust and simple routing algorithms for ad hoc mobile wireless networks. , 0, , .		0
141	Geometric programming dual of channel capacity. , 2003, , .		0
142	Matching air-interface with backbone: end-to-end resource allocation in hybrid networks. , 0, , .		0
143	Joint rate control and scheduling for wireless uplink video streaming. Journal of Zhejiang University: Science A, 2006, 7, 801-810.	1.3	0
144	Fast Coper for Broadband Access: An Overview. , 2007, , .		0

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145	Simple, optimal, and robust random access. , 2008, , .		0
146	On the asymptotic behavior of selfish transmitters sharing a common channel. , 2008, , .		0
147	Identifying online communities of interest using side information. , 2012, , .		0
148	A Novel Framework for Cost Constrained Network Sharing. IEEE Transactions on Mobile Computing, 2023, 22, 4422-4438.	3.9	0