# Mung Chiang

List of Publications by Year
in descending order

| 148 papers | 11,065 citations | 76322<br>40 h-index | 79691<br>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. | 8.7 | 1,740 |
| 2 | A tutorial on decomposition methods for network utility maximization. IEEE Journal on Selected Areas in Communications, 2006, 24, 1439-1451. | 14.0 | 1,315 |
| 3 | Layering as Optimization Decomposition: A Mathematical Theory of Network Architectures. Proceedings of the IEEE, 2007, 95, 255-312. | 21.3 | 1,065 |
| 4 | Power Control By Geometric Programming. IEEE Transactions on Wireless Communications, 2007, 6, 2640-2651. | 9.2 | 713 |
| 5 | Auction-Based Resource Allocation for Cooperative Communications. IEEE Journal on Selected Areas in Communications, 2008, 26, 1226-1237. | 14.0 | 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. | 5.7 | 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. | 14.0 | 232 |
| 9 | Geometric Programming for Communication Systems. Foundations and Trends in Communications and Information Theory, 2005, 2, 1-154. | 3.1 | 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. | 14.0 | 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. | 14.0 | 172 |
| 12 | Learning about Social Learning in MOOCs: From Statistical Analysis to Generative Model. IEEE Transactions on Learning Technologies, 2014, 7, 346-359. | 3.2 | 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. | 14.0 | 154 |
| 14 | Autonomous Spectrum Balancing for Digital Subscriber Lines. IEEE Transactions on Signal Processing, 2007, 55, 4241-4257. | 5.3 | 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. | 5.3 | 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. | 3.8 | 138 |
| 18 | Fast Algorithms and Performance Bounds for Sum Rate Maximization in Wireless Networks. IEEE/ACM Transactions on Networking, 2013, 21, 706-719. | 3.8 | 136 |

| # | ARTICLE | IF | CITATIONS |
|---|---------|-----|-----------|
| 19 | Distributed Rate Allocation for Inelastic Flows. IEEE/ACM Transactions on Networking, 2007, 15, 1240-1253. | 3.8 | 120 |
| 20 | Multiresource Allocation: Fairness–Efficiency Tradeoffs in a Unifying Framework. IEEE/ACM Transactions on Networking, 2013, 21, 1785-1798. | 3.8 | 117 |
| 21 | Utility-optimal random-access control. IEEE Transactions on Wireless Communications, 2007, 6, 2741-2751. | 9.2 | 111 |
| 22 | Fast-Convergent Federated Learning. IEEE Journal on Selected Areas in Communications, 2021, 39, 201-218. | 14.0 | 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. | 14.0 | 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. | 5.3 | 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. | 8.3 | 96 |
| 29 | Channel Capacity and State Estimation for State-Dependent Gaussian Channels. IEEE Transactions on Information Theory, 2005, 51, 1486-1495. | 2.4 | 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. | 4.1 | 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. | 2.4 | 77 |
| 35 | From Technological Networks to Social Networks. IEEE Journal on Selected Areas in Communications, 2013, 31, 548-572. | 14.0 | 76 |
| 36 | Mining MOOC Clickstreams: Video-Watching Behavior vs. In-Video Quiz Performance. IEEE Transactions on Signal Processing, 2016, 64, 3677-3692. | 5.3 | 75 |

| # | ARTICLE | IF | CITATIONS |
|---|---------|-----|-----------|
| 37 | Quantifying Political Leaning from Tweets, Retweets, and Retweeters. IEEE Transactions on Knowledge and Data Engineering, 2016, 28, 2158-2172. | 5.7 | 72 |
| 38 | Equilibrium of Heterogeneous Congestion Control: Existence and Uniqueness. IEEE/ACM Transactions on Networking, 2007, 15, 824-837. | 3.8 | 69 |
| 39 | Behavior-Based Grade Prediction for MOOCs via Time Series Neural Networks. IEEE Journal on Selected Topics in Signal Processing, 2017, , 1-1. | 10.8 | 66 |
| 40 | Pricing-Based Decentralized Spectrum Access Control in Cognitive Radio Networks. IEEE/ACM Transactions on Networking, 2013, 21, 522-535. | 3.8 | 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. | 2.4 | 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. | 8.3 | 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. | 9.2 | 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. | 3.2 | 48 |
| 48 | Utility-optimal random access without message passing. IEEE Transactions on Wireless Communications, 2009, 8, 1073-1079. | 9.2 | 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. | 3.8 | 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. | 3.8 | 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. | 3.2 | 37 |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 55 | Nonconvex Optimization for Communication Networks. Advances in Mechanics and Mathematics, 2009, , 137-196. | 0.7 | 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. | 3.8 | 28 |
| 59 | Optimal Rate-Reliability-Delay Tradeoff in Networks with Composite Links. IEEE Transactions on Communications, 2009, 57, 1390-1401. | 7.8 | 26 |
| 60 | Average Message Delivery Time for Small-World Networks in the Continuum Limit. IEEE Transactions on Information Theory, 2010, 56, 4447-4470. | 2.4 | 26 |
| 61 | Internet of Things Session Management Over LTEâ€"Balancing Signal Load, Power, and Delay. IEEE Internet of Things Journal, 2016, 3, 339-353. | 8.7 | 26 |
| 62 | Elastic service availability: utility framework and optimal provisioning. IEEE Journal on Selected Areas in Communications, 2008, 26, 55-65. | 14.0 | 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. | 3.8 | 25 |
| 65 | Implementing utility-optimal CSMA. , 2009, , . | | 24 |
| 66 | Distributed Nonconvex Power Control using Gibbs Sampling. IEEE Transactions on Communications, 2012, 60, 3886-3898. | 7.8 | 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. | 4.2 | 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. | 0.6 | 22 |
| 72 | Reverse Engineering MAC. , 0, , . | | 21 |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 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. | 2.4 | 20 |
| 76 | Virtualized Control Over Fog: Interplay Between Reliability and Latency. IEEE Internet of Things Journal, 2018, 5, 5030-5045. | 8.7 | 20 |
| 77 | On the Efficiency of Social Recommender Networks. IEEE/ACM Transactions on Networking, 2016, 24, 2512-2524. | 3.8 | 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. | 14.0 | 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. | 1.2 | 14 |
| 83 | On the Efficiency of Online Social Learning Networks. IEEE/ACM Transactions on Networking, 2018, 26, 2076-2089. | 3.8 | 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. | 2.4 | 12 |
| 88 | Personalized Thread Recommendation for MOOC Discussion Forums. Lecture Notes in Computer Science, 2019, , 725-740. | 1.3 | 12 |
| 89 | Characterizing task completion latencies in multi-point multi-quality fog computing systems. Computer Networks, 2020, 181, 107526. | 5.1 | 12 |
| 90 | Equilibrium of Heterogeneous Congestion Control Protocols. , 2006, , . | | 11 |

| # | Article | IF | Citations |
|---|---------|----|-----------|
| 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. | 14.0 | 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. | 9.2 | 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. | 3.8 | 7 |
| 107 | Content aware optimization for video delivery over WCDMA. Eurasip Journal on Wireless Communications and Networking, 2012, 2012, . | 2.4 | 7 |
| 108 | Decomposing Data Analytics in Fog Networks. , 2017, , . | | 7 |

| # | ARTICLE | IF | CITATIONS |
|---|---------|-----|-----------|
| 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. | 7.8 | 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. | 7.8 | 5 |
| 118 | Guest Editorial: Smart Data Pricing for Next-Generation Networks. IEEE Journal on Selected Areas in Communications, 2020, 38, 641-644. | 14.0 | 5 |
| 119 | Distributed wide-area traffic management for cloud services. Performance Evaluation Review, 2012, 40, 409-410. | 0.6 | 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. | 2.7 | 3 |

| # | Article | IF | Citations |
|---|---------|----|-----------| 
| 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. | 3.8 | 3 |
| 128 | Optimal sleeping: models and experiments for energy-delay tradeoff. International Journal of Systems Science: Operations and Logistics, 2017, 4, 356-371. | 3.0 | 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. | 0.9 | 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. | 2.4 | 0 |
| 144 | Fast Coper for Broadband Access: An Overview. , 2007, , . | | 0 |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 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. | 5.8 | 0 |