

Xin Liu

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Research Interests	Stochastic models and analysis, online learning and optimization, data-driven decision making
Current Appointment	Postdoctoral Research Fellow, May 2020 – Present University of Michigan, Anna Arbor, Michigan Electrical Engineering and Computer Science Department Advisor: Prof. Lei Ying
Education	Arizona State University, Tempe, Arizona Ph.D. in Electrical Engineering, Aug. 2014 – Dec. 2019 Advisor: Prof. Lei Ying University of Chinese Academy of Sciences, Beijing, China M.S. in Signal and Information Processing, Sept. 2011 – July 2014 Advisor: Prof. Haibing Wang Hunan University, Changsha, Hunan B.E. in Electrical Engineering, Sept. 2007 – June 2011
Honors and Awards	INFOCOM paper invited for a fast review to IEEE Transactions on Network Science and Engineering (7 out of 312 accepted papers), 2018 Best Student Paper at CHINACOM, 2013 Excellent Bachelor Thesis, Hunan University, 2011
Preprint	Xin Liu, Bin Li, Pengyi Shi, and Lei Ying. <i>POND: Pessimistic-Optimistic oNline Dispatch</i> . ArXiv:2010.09995. Submitted to SIGMETRICS 2021. Hairi, Xin Liu, and Lei Ying. <i>Beyond Scaling: Calculable Error Bounds of the Power-of-Two-Choices Mean-Field Model in Heavy-Traffic</i> . Submitted to INFOCOM 2021. Xin Liu, Kang Gong, and Lei Ying. <i>Steady-State Analysis of Load Balancing with Coxian-2 Distribution Service Times</i> . ArXiv:2005.09815. (Major Revision and Second Round Review in Naval Research Logistics). Xin Liu and Lei Ying. <i>On Universal Scaling of Distributed Queues under Load Balancing</i> . ArXiv:1912.11904. (Review in IEEE/ACM Transactions on Networking).
Journal Publications	Xin Liu and Lei Ying. <i>Steady-State Analysis of Load Balancing Algorithms in the Sub-Halfin-Whitt Regime</i> . Journal of Applied Probability Apr., 2020. Anton Braverman, Jim Dai, Xin Liu, and Lei Ying. <i>Empty-car routing in ridesharing systems</i> . Operations Research. Aug., 2019. Xin Liu and Lei Ying. <i>Spatial-temporal routing for supporting end-to-end hard deadlines in multi-hop networks</i> . Performance Evaluation. July, 2019. Xin Liu and Lei Ying. <i>On achieving zero delay with power-of-d-choices load balancing</i> . IEEE Transactions on Network Science and Engineering. Oct., 2018

	<p>Xin Liu, Feifei Gao, Gongpu Wang, and Xiyuan Wang. <i>Joint beamforming and user selection in multicast downlink channel under secrecy-outage constraint</i>. IEEE Communications Letters, Jan., 2014.</p>
Conference Publications	<p>Xin Liu and Lei Ying. <i>A Simple Steady-State Analysis of Load Balancing Algorithms in the Sub-Halfin-Whitt Regime</i>. Mathematical Performance Modeling and Analysis Workshop (MAMA) in SIGMETRICS, Irvine, California, June, 2018 .</p> <p>Xin Liu and Lei Ying. <i>On achieving zero delay with power-of-d-choices load balancing</i>. In Proc. IEEE International Conference on Computer Communications (INFOCOM), Honolulu, Hawaii, Apr., 2018. Fast-Track Review for IEEE Transactions on Network Science and Engineering (7 out of 312 accepted papers were invited).</p> <p>Yiqiu Liu, Xin Liu, Lei Ying, and R. Srikant. <i>Wireless scheduling with deadline and power constraints</i>. 2018 Annual Conference on Information Science and Systems (CISS), Princeton, NJ, Mar., 2018.</p> <p>Anton Braverman, Jim Dai, Xin Liu, and Lei Ying. <i>Fluid-model-based car routing for modern ridesharing systems</i>. (Poster) SIGMETRICS, Urbana-Champaign, Illinois, June, 2017.</p> <p>Xin Liu and Lei Ying. <i>Spatial-temporal routing for supporting end-to-end hard deadlines in multi-hop networks</i>. 2016 Annual Conference on Information Science and Systems (CISS), Princeton, NJ, Apr., 2016.</p> <p>Xin Liu, Haoqi Li, and Haibin Wang. <i>Probability constrained robust multicast beamforming in cognitive radio network</i>. 8th International Conference on Communications and Networking in China (CHINACOM), Guilin, Aug., 2013. (Best Student Paper).</p>
Selected Presentations	<p>“Steady-State Analysis of Load Balancing Algorithms”</p> <ul style="list-style-type: none"> - ACM MobiHoc Frontiers Workshop, Virtual, Oct. 2020 - INFORMS Annual Meeting, Phoenix, Arizona, Nov. 2018 - Poster at NSF Cyber-Physical System Meeting, Alexandria, Virginia, Nov. 2018 <p>“On Achieving Zero Delay with Power-of-d-Choices Load Balancing”</p> <ul style="list-style-type: none"> - INFOCOM, Honolulu, Hawaii, Apr. 2018 - INFORMS Annual Meeting, Houston, Texas, Oct. 2017 <p>“Fluid-Model-Based Car Routing for Modern Ridesharing Systems”</p> <ul style="list-style-type: none"> - Poster at SIGMETRICS, Urbana-Champaign, Illinois, June, 2017
Industry Experience	<p>Senior Algorithm Engineer in Cainiao AI, Hangzhou, China, Dec. 2019 – Jan. 2020</p> <p>Algorithm Engineer Intern in Cardinal Operations, Shanghai, China, Summer, 2018</p>
Professional Service	<p>Reviewer for IEEE/ACM Transactions on Networking, Performance Evaluation, IEEE Transactions on Information Theory, IEEE Journal on Selected Areas in Communications, IEEE Communications Letters, INFOCOM, MOBIHOC, WiOpt.</p>