

Xin Liu

Contact Information	Website (Google Scholar): https://liuxincell.github.io/ Email: liuxin7@shanghaitech.edu.cn Phone: 021-20684859
Research Interests	Stochastic modeling, analysis, and optimization; online learning and decision-making; reinforcement Learning.
Employment	Assistant Professor, Aug. 2021 – Present ShanghaiTech , Shanghai, China School of Informatiton Science and Technology Postdoctoral Research Fellow, May 2020 – July 2021 University of Michigan , Ann Arbor, Michigan, US Electrical Engineering and Computer Science Department Advisor: Prof. Lei Ying
Education	Arizona State University , Tempe, Arizona, US 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, China B.E. in Electrical Engineering, Sept. 2007 – June 2011
Honors and Awards	INFOCOM paper invited for a fast review to the 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	[P3] Honghao Wei, Xin Liu , and Lei Ying. <i>A Provably-Efficient Model-Free Algorithm for Constrained Markov Decision Processes</i> . ArXiv:2106.01577. (Under Review). [P2] Xin Liu , Bin Li, Pengyi Shi, and Lei Ying. <i>An Efficient Pessimistic-Optimistic Algorithm for Stochastic Linear Bandits with General Constraints</i> . ArXiv:2102.05295. (Under Review). [P1] Xin Liu , Bin Li, Pengyi Shi, and Lei Ying. <i>POND: Pessimistic-Optimistic oNline Dispatching</i> . ArXiv:2010.09995. (A Short Version Accepted in Sigmetrics 2021 RLNQ Workshop).
Journal Publications	[J8] Xin Liu and Lei Ying. <i>On Universal Scaling of Distributed Queues under Load Balancing</i> . IEEE/ACM Transactions on Networking, 2021. [J7] Xin Liu , Kang Gong, and Lei Ying. <i>Steady-State Analysis of Load Balancing with Coxian-2 Distribution Service Times</i> . Naval Research Logistics. Mar., 2021 [J6] Yiqiu Liu, Xin Liu , Lei Ying, and R. Srikant. <i>Wireless Scheduling with Deadline and Power Constraints</i> . Performance Evaluation. Mar., 2021. [J5] 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.

[J4] Anton Braverman, Jim Dai, **Xin Liu**, and Lei Ying. *Empty-car routing in ridesharing systems*. Operations Research. Aug., 2019. **Media:** [TechXplore] [Informs Press].

[J3] **Xin Liu**, Weichang Wang, and Lei Ying. *Spatial-temporal Routing for Supporting End-to-end Hard Deadlines in Multi-hop Networks*. Performance Evaluation. July, 2019.

[J2] **Xin Liu** and Lei Ying. *On Achieving Zero delay with Power-of-d-choices Load Balancing*. IEEE Transactions on Network Science and Engineering. Oct., 2018.

[J1] **Xin Liu**, Feifei Gao, Gongpu Wang, and Xiyuan Wang. *Joint Beamforming and User Selection in Multicast Downlink Channel under Secrecy-outage Constraint*. IEEE Communications Letters, Jan., 2014.

Conference Publications

[C7] Hairi, **Xin Liu**, and Lei Ying. *Beyond Scaling: Calculable Error Bounds of the Power-of-Two-Choices Mean-Field Model in Heavy-Traffic*. MOBIHOC 2021.

[C6] **Xin Liu** and Lei Ying. *A Simple Steady-State Analysis of Load Balancing Algorithms in the Sub-Halfin-Whitt Regime*. Mathematical Performance Modeling and Analysis Workshop (MAMA) in SIGMETRICS, Irvine, California, June, 2018.

[C5] **Xin Liu** and Lei Ying. *On Achieving Zero Delay with Power-of-d-choices Load Balancing*. 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).

[C4] Yiqiu Liu, **Xin Liu**, Lei Ying, and R. Srikant. *Wireless Scheduling with Deadline and Power Constraints*. 2018 Annual Conference on Information Science and Systems (CISS), Princeton, NJ, Mar., 2018.

[C3] Anton Braverman, Jim Dai, **Xin Liu**, and Lei Ying. *Fluid-model-based Car Routing for Modern Ridesharing Systems*. (Poster) SIGMETRICS, Urbana-Champaign, Illinois, June, 2017.

[C2] **Xin Liu** and Lei Ying. *Spatial-temporal Routing for Supporting End-to-end Hard Deadlines in Multi-hop Networks*. 2016 Annual Conference on Information Science and Systems (CISS), Princeton, NJ, Apr., 2016.

[C1] **Xin Liu**, Haoqi Li, and Haibin Wang. *Probability Constrained Robust Multicast Beamforming in Cognitive Radio Network*. 8th International Conference on Communications and Networking in China (CHINACOM), Guilin, Aug., 2013. (Best Student Paper).

Selected Presentations

“Steady-State Analysis of Load Balancing Algorithms”

- 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

“On Achieving Zero Delay with Power-of-d-Choices Load Balancing”

- INFOCOM, Honolulu, Hawaii, Apr. 2018
- INFORMS Annual Meeting, Houston, Texas, Oct. 2017

“Fluid-Model-Based Car Routing for Modern Ridesharing Systems”

- Poster at SIGMETRICS, Urbana-Champaign, Illinois, June, 2017

**Industry
Experience**

Senior Algorithm Engineer in Cainiao AI, Hangzhou, China, Dec. 2019 – Jan. 2020
Algorithm Engineer Intern in Cardinal Operations, Shanghai, China, Summer, 2018

**Professional
Service**

Program Committee for MOBIHOC 2021, ITC 33, WiOpt 2021, INFOCOM 2022.
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.