HONGBO LI

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RESEARCH INTERESTS

- Networked AI
- Game Theory and Mechanism Design
- Machine Learning Theory

EXPERIENCE

Singapore University of Technology and Design, Singapore 08/2024 - current
Postdoctoral Research Fellow, advised by Prof. Lingjie Duan

The Ohio State University, Columbus, US 12/2023 - 06/2023
Visiting Scholar, advised by Prof. Yingbin Liang and Prof. Ness B. Shroff

Shanghai Jiao Tong University, Shanghai, China 03/2018 - 08/2020
Research Assistant, advised by Prof. Jianping He

EDUCATION BACKGROUND

Singapore University of Technology and Design, **Ph.D.**, Singapore 09/2020 - 07/2024
Engineering Systems and Design Pillar
Thesis: Mechanism Design for Distributed Learning Networks, Advised by Prof. Lingjie Duan

Shanghai Jiao Tong University, **B.Sc.**, Shanghai, China 09/2015 - 06/2019
School of Electronic Information and Electrical Engineering, IEEE Honor Class

PUBLICATIONS

Conference Papers

1. **H. Li** and L. Duan, "Distributed Learning for Dynamic Congestion Games," In *IEEE International Symposium on Information Theory (ISIT)*, 3654-3659, 2024.
2. S. Ngoh*, **H. Li***, and L. Duan, "Model Sharing Mechanisms For Distributed Learning," In *IEEE Annual Congress on Artificial Intelligence of Things (AIoT)*, 2024.
3. **H. Li** and L. Duan, "When Congestion Games Meet Mobile Crowdsourcing: Selective Information Disclosure," In *Proceedings of AAAI Conference on Artificial Intelligence*, 37(5), 5739-5746. 2023. (Oral)

Journal Papers

1. **H. Li** and L. Duan, "Human-in-the-loop Learning for Dynamic Congestion Games," in *IEEE Transactions on Mobile Computing*. 2024.
2. **H. Li** and L. Duan, "Online Pricing Incentive to Sample Fresh Information," in *IEEE Transactions on Network Science and Engineering*, 10 (1), 514-526. 2023.

Preprints

1. **H. Li**, and L. Duan, "Theory of Mixture-of-Experts for Mobile Edge Computing", submitted for publication.
2. **H. Li**, S. Lin, L. Duan, Y. Liang, and N. B. Shroff, "Theory on Mixture-of-Experts in Continual Learning", submitted for publication [Online Available:] https://arxiv.org/abs/2406.16437.
3. **H. Li**, L. Duan, and N. B. Shroff, "Distributed Conflict-Graph Learning for Competitive Multi-armed Bandits", submitted for publication.
4. **H. Li**, L. Duan, and N. B. Shroff, "When Mobile Crowdsourcing Meets Queueing Systems: Side-payment Mechanism Design", under review of *IEEE/ACM Transactions on Networking*.
5. **H. Li**, and L. Duan, "Competitive Multi-armed Bandit Games: Analysis and Regulation", under review of *IEEE Transactions on Mobile Computing*.
6. **H. Li**, and L. Duan, 'To Optimize Human-in-the-loop Learning in Repeated Routing Games", under review of *IEEE Transactions on Mobile Computing* (Major Revision).
7. **H. Li**, and L. Duan, "To Analyze and Regulate Human-in-the-loop Learning for Congestion Games", under review of *IEEE/ACM Transactions on Networking* (Major Revision).

PATENT

1. **H. Li**, X. Ding, Y. Li, and J. He, "A Particle-Filter-Based Localization Method for Multi-Robot Formation", patent number: CN202010128966.9.

AWARDS & HONORS

- IEEE ISIT Student Travel Grant 07/2024
- SUTD PhD Fellowship 09/2020
- Outstanding Graduates of Shanghai (Top 2% in SJTU) 05/2019

TEACHING EXPERIENCES

1. **Game Theory**, teaching assistant, undergraduate course 05/2022 - 08/2022
   Singapore University of Technology and Design, Engineering Systems and Design Pillar
2. **Data and Business Analytics**, teaching assistant, undergraduate course 01/2022 - 04/2022
   Singapore University of Technology and Design, Engineering Systems and Design Pillar

TECHNICAL REVIEWER

- IEEE Transactions on Services Computing (IEEE TSC).
- IEEE Transactions on Network Science and Engineering (IEEE TNSE).
- IEEE Transactions on Vehicular Technology (IEEE TVT).
- IEEE INFOCOM 2025.
- ACM MobiHoc 2022, 2024.

TALKS

- "When Mobile Crowdsourcing Meets Congestion Games: Selective Information Disclosure" 04/2023
  Shanghai Jiao Tong University, Shanghai, China.