

HONGBO LI

(Updated: December 2024)

Address: 204A, Building 2, 8 Somapah Road, Singapore, 487372

✉ hongbo_li@sutd.edu.sg — ☎ (65) 89420248 — 🏠 Homepage

RESEARCH INTERESTS

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

EXPERIENCE

- Singapore University of Technology and Design**, Singapore 08/2024 - current
Postdoctoral Research Fellow, advised by Prof. Lingjie Duan
- AI-EDGE Institute, The Ohio State University**, Columbus, US 12/2023 - 06/2023
Visiting Scholar, advised by Prof. Ness B. Shroff and Prof. Yingbin Liang
- 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

- H. Li**, and L. Duan, “Theory of Mixture-of-Experts for Mobile Edge Computing”, In *IEEE Conference on Computer Communications (INFOCOM)*, 2025.
- H. Li** and L. Duan, “Distributed Learning for Dynamic Congestion Games,” In *IEEE International Symposium on Information Theory (ISIT)*, 3654-3659, 2024.
- S. Ngoh*, **H. Li***, and L. Duan, “Model Sharing Mechanisms For Distributed Learning,” In *IEEE Annual Congress on Artificial Intelligence of Things (AIoT)*, 2024.
- 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

- H. Li** and L. Duan, “To Optimize Human-in-the-loop Learning in Repeated Routing Games,” in *IEEE Transactions on Mobile Computing*, 2024.
- H. Li** and L. Duan, “Human-in-the-loop Learning for Dynamic Congestion Games,” in *IEEE Transactions on Mobile Computing*, 23 (12), 11159 - 11171, 2024.
- 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

- 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>.
- H. Li**, L. Duan, and N. B. Shroff, “Distributed Conflict-Graph Learning for Competitive Multi-armed Bandits”, submitted for publication.
- 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*.
- H. Li**, and L. Duan, “Competitive Multi-armed Bandit Games for Spectrum Sharing”, under review of *IEEE Transactions on Mobile Computing*.
- 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

- H. Li**, X. Ding, Y. Li, and J. He, “Multi-robot Formation Positioning Method Based on Particle Filter and Robot Equipment”, patent number: [Online Available] CN202010128966.9.

AWARDS & HONORS

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

TECHNICAL REVIEWER

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

TALKS

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| ➤ “When Mobile Crowdsourcing Meets Congestion Games: Selective Information Disclosure”
Shanghai Jiao Tong University, Shanghai, China. | 04/2023 |
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