

**Interests:** Sequential decision-making, Optimization, Applied probability with applications in AI & OR.

## Education

- **The Chinese University of Hong Kong, Shenzhen, China** 2018–  
*Ph.D. candidate* in Computer and Information Engineering.  
**Supervisor:** [Zhi-Quan \(Tom\) Luo](#) **Thesis direction:** Efficient Reinforcement Learning  
**Committee:** [Jim Dai](#), [Xinyun Chen](#), [Baoxiang Wang](#), [Benjamin Van Roy](#) (Stanford & Google DeepMind)
- **Huazhong University of Science and Technology, China** 2017  
*B.Eng.* in Computer Science (Honors Program). **Outstanding Graduate.**  
**Supervisor:** [Kun He](#) **Thesis:** Learning multi-channel influence in networks

## Professional Experience

### Research Positions

- **The Chinese University of Hong Kong, Shenzhen, China** 2018–  
*Graduate Research Assistant with Presidential Fellowship* [Zhi-Quan \(Tom\) Luo](#)
- **Tencent AI & Robotics X, Shenzhen, China** 2019–2022  
*Research Intern* in Agent Center [Lei Han](#)
- **SenseTime Research, Peking, China** 2018  
*Computer Vision Trainee Researcher* [Jing Shao](#)
- **Department of Computer Science, Cornell University, Ithaca, NY** 2017  
*Undergraduate Research Assistant* [John E. Hopcroft](#)
- **Microsoft Research Lab, Asia** 2016  
*Research Intern* in Theory Center [Wei Chen](#)
- **Hopcroft Center on Computing Science, China** 2015–2017  
*Undergraduate Research Assistant* [Kun He](#)

### Academic Service

- **Reviewer** for Conference on Neural Information Processing Systems (NeurIPS), International Conference on Learning Representations (ICLR), ICLR 2024 Workshop on Bridging the Gap Between Practice and Theory in Deep Learning (BGPT).
- **Organizer** for [RL Seminar](#) in The Chinese University of Hong Kong, Shenzhen, China. (Spring 2019, Summer 2020, Fall 2020, Spring 2021, Summer 2021, Fall 2021, Spring 2022, Fall 2022.)

### Teaching

- **Stochastic Processes** (STA/DDA4001) by [Jim Dai](#), Fall 2018
- **Optimization II** (MAT3220) by [Shuzhong Zhang](#), Spr. 2019
- **Distributed and Parallel Computing** (CSC4005) by [Yeh-Ching Chung](#), Fall 2019
- **Reinforcement Learning** (DDA6105/CIE6023) by [Xinyun Chen](#) and [Jim Dai](#), Fall 2020
- **Matrix Analysis** (CIE6002) by [Tsung-Hui Chang](#), Spr. 2021
- **Deep Learning and Their Applications** (MDS6224) by [Chen Chen](#), Spr. 2022

## Awards

- **Best Paper Award**, in the third doctoral and postdoctoral Daoyuan academic forum, 2024.
- **SRIBD Ph.D. Fellowship** (Gold Class), by Shenzhen Research Institute of Big Data (SRIBD), 2023.

## Awards (continued)

- **Presidential Ph.D. Fellowship**, by The Chinese University of Hong Kong, Shenzhen, 2019–2023.
- **Tencent AI Ph.D. Fellowship**, by Tencent AI& The Chinese University of Hong Kong, Shenzhen, 2018.
- **Award of Excellence** in Internship, by Microsoft Research Lab, 2016.
- **Qiming Star Award** (top 5 overall undergraduates), by Huazhong University of Science and Technology, 2016. **Reports:** [1] [Newspaper](#). [2] [HUST Online](#).
- **National Scholarship** (Academic Excellence), by Huazhong University of Science and Technology.
- **First Prize**, in Parallel computation and Application Contest (PAC) held by Intel and CCF, 2015.
- **First Prize**, China National Mathematics Olympiad (Province level).

## Selected Oral Presentations

- **HyperAgent: A Simple, Efficient and Scalable RL Framework for Complex Environments**  
*Invited talk* in International Symposium on Mathematical Programming (ISMP), Montréal, Jul., 2024.  
*Virtual talk* at Princeton University, May., 2024.  
*Invited talk* in Informs Optimization Society (IOS) Conference, Rice University, Mar., 2024.  
*Contributed talk*, in the third doctoral and postdoctoral Daoyuan academic forum, Jan. 13, 2024.
- **Foundation Model Decision-making: Adaptive Uncertainty Estimation and Exploration**  
*Invited talk* at RLChina.org, Jun., 2024.
- **Towards AGI for Humanity through Efficient Reinforcement Learning**  
*Contributed Talk* in Graduate Research Forum, CUHK, Shenzhen Oct. 21, 2023.
- **No-Regret Learning in Unknown Game with Applications**  
*Invited Talk* in RL Theory Student Workshop at Nanjing University, Aug. 23, 2022.  
*Contributed Talk* in the second doctoral and postdoctoral Daoyuan academic forum, Aug. 20, 2022.
- **HyperDQN: A Randomized Exploration Method for Deep Reinforcement Learning**  
*Contributed Talk* in NeurIPS Workshop Ecological Theory of Reinforcement Learning, Dec. 14, 2021

## Selected Research Publications

### Preprints

- 1 **Yingru Li**. *Probability Tools for Sequential Random Projection*. 2024. arXiv: [2402.14026 \[math.ST\]](#).
- 2 **Yingru Li**. *Simple, unified analysis of Johnson-Lindenstrauss with applications*. under review. 2024. arXiv: [2402.10232 \[stat.ML\]](#).
- 3 **Yingru Li**, Liangqi Liu, Wenqiang Pu, and Zhi-Quan Luo. *Optimistic Thompson Sampling for No-Regret Learning in Unknown Games*. under review. 2024. arXiv: [2402.09456 \[cs.LG\]](#).
- 4 **Yingru Li**, Jiawei Xu, and Zhi-Quan Luo. *Efficient Exploration with Foundation Model via Scalable and Adaptive Uncertainty Estimation*. under review. 2024.

### Journal Articles

- 5 Kun He, **Yingru Li**, Sucheta Soundarajan, and John E Hopcroft. “Hidden community detection in social networks”. In: *Information Sciences* 425 (2018), pp. 92–106.

### Conference Proceedings

- 6 **Yingru Li** and Zhi-Quan Luo. “Prior-dependent analysis of posterior sampling reinforcement learning with function approximation”. In: *The 27th International Conference on Artificial Intelligence and Statistics (AISTATS)*. 2024. arXiv: [2403.11175 \[stat.ML\]](#).

- 7 **Yingru Li**, Jiawei Xu, Lei Han, and Zhi-Quan Luo. “HyperAgent: A Simple, Scalable, Efficient and Provable Reinforcement Learning Framework for Complex Environments”. In: *Proceedings of the 41th International Conference on Machine Learning*. Proceedings of Machine Learning Research. 2024. arXiv: [2402.10228](https://arxiv.org/abs/2402.10228) [cs.LG].
- 8 Ziniu Li, **Yingru Li**, Yushun Zhang, Tong Zhang, and Zhi-Quan Luo. “HyperDQN: A Randomized Exploration Method for Deep Reinforcement Learning”. In: *International Conference on Learning Representations (ICLR)*. 2022.
- 9 Qing Wang, **Yingru Li**, Jiechao Xiong, and Tong Zhang. “Divergence-Augmented Policy Optimization”. In: *Advances in Neural Information Processing Systems (NeurIPS)*. Vol. 32. 2019.

## Under Preparation

- 10 **Yingru Li**, Yanchuan Tang, and Zhi-Quan Luo. “Medical Multi-turn Conversation and Decision-making”. under preparation. 2024.
- 11 Jiawei Xu, **Yingru Li**, and Zhi-Quan Luo. “Agentic Fine-tuning: Value is all you need”. under preparation. 2024.