

# Yingru Li

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🌐 <https://richardli.xyz/>

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 & 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** 2019  
*Research Intern* in Agent Center [Lei Han](#)
- **SenseTime Research** 2018  
*Computer Vision Trainee Researcher* [Jing Shao](#)
- **Department of Computer Science, Cornell University, Ithaca, NY** 2017  
*Undergraduate Research Assistant* [John 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. (Spring 2019, Summer 2020, Fall 2020, Spring 2021, Summer 2021, Fall 2021, Spring 2022, Fall 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.
- **Presidential Ph.D. Fellowship**, by The Chinese University of Hong Kong, Shenzhen, 2019–2023.
- **Tencent Ph.D. Fellowship**, Jointly by Tencent & 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**, in Chinese Mathematical Olympiad (CMO) at province level, 2013.

## Teaching

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

## 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.  
*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.
- **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

## Research Publications

### Preprints

- 1 Y. Li, "Probability tools for sequential random projection," 2024. arXiv: [2402.14026 \[math.ST\]](#).
- 2 Y. Li, "Simple, unified analysis of johnson-lindenstrauss with applications," under review, 2024. arXiv: [2402.10232 \[stat.ML\]](#).
- 3 Y. Li, L. Liu, W. Pu, and Z.-Q. Luo, "Optimistic thompson sampling for no-regret learning in unknown games," under review, 2024. arXiv: [2402.09456 \[cs.LG\]](#).
- 4 Y. Li, J. Xu, L. Han, and Z.-Q. Luo, "Hyperagent: A simple, scalable, efficient and provable reinforcement learning framework for complex environments," under review, 2024. arXiv: [2402.10228 \[cs.LG\]](#).
- 5 Y. Li, J. Xu, and Z.-Q. Luo, "Approximate thompson sampling via hypermodel and index sampling," To appear on arXiv, 2024.

### Journal Articles

- 6 K. He, Y. Li, S. Soundarajan, and J. E. Hopcroft, "Hidden community detection in social networks," *Information Sciences*, vol. 425, pp. 92–106, 2018.

### Conference Proceedings

- 7 Y. Li and Z.-Q. Luo, "Prior-dependent analysis of posterior sampling reinforcement learning with function approximation," in *The 27th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2024.
- 8 Z. Li, Y. Li, Y. Zhang, T. Zhang, and Z.-Q. Luo, "Hyperdqn: A randomized exploration method for deep reinforcement learning," in *International Conference on Learning Representations (ICLR)*, 2022.
- 9 Q. Wang, Y. Li, J. Xiong, and T. Zhang, "Divergence-augmented policy optimization," in *Advances in Neural Information Processing Systems (NeurIPS)*, vol. 32, 2019.

### Workshop Papers

- 10 Y. Li, L. Liu, W. Pu, and Z.-Q. Luo, *Optimistic thompson sampling for no-regret learning in unknown games*, ICML 2023 Workshop The Many Facets of Preference-Based Learning, 2023.

- 11 **Y. Li**, J. Xu, and Z. Luo, *Efficient and scalable reinforcement learning via hypermodel*, NeurIPS 2023 Workshop on Adaptive Experimental Design and Active Learning in the Real World, 2023.
- 12 Z. Li, **Y. Li**, Y. Zhang, T. Zhang, and Z.-Q. Luo, *Hyperdq: A randomized exploration method for deep reinforcement learning*, NeurIPS 2021 Workshop Ecological Theory of Reinforcement Learning, 2021.