

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 with Prof. *Zhi-Quan (Tom) Luo*
- **Tencent AI & Robotics X** 2019
Research Intern in Agent Center with Dr. *Lei Han*
- **SenseTime Research** 2018
Computer Vision Trainee Researcher (Continual learning in CNN) with Dr. *Jing Shao*
- **Department of Computer Science, Cornell University, Ithaca, NY** 2017
Undergraduate Research Assistant with Prof. *John Hopcroft*
- **Microsoft Research Lab - Asia** 2016
Research Intern in Theory Center with Dr. *Wei Chen*
- **Hopcroft Center on Computing Science, China** 2015-2017
Undergraduate Research Assistant with Prof. *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	■ Stochastic Processes (STA/DDA4001)	by Prof. Jim Dai
Spr. 2019	■ Optimization II (MAT3220)	by Prof. Shuzhong Zhang
Fall 2019	■ Distributed and Parallel Computing (CSC4005)	by Prof. Yeh-Ching Chung
Fall 2020	■ Reinforcement Learning (DDA6105/CIE6023)	by Prof. Xinyun Chen and Jim Dai
Spr. 2021	■ Matrix Analysis (CIE6002)	by Prof. Tsung-Hui Chang
Spr. 2022	■ Deep Learning and Their Applications (MDS6224)	by Prof. Chen Chen

Selected Oral Presentations

- **HyperAgent: A Simple, Efficient and Scalable RL Framework for Complex Environments**
Contributed talk, in The third doctoral and postdoctoral Daoyuan academic forum, Jan. 13, 2024.
Invited talk in Informs Optimization Society (IOS) Conference, Rice University, Mar., 2024.
Invited talk in International Symposium on Mathematical Programming (ISMP), Montréal, Jul., 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.