

BIN LUO | Curriculum Vitae

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🔗 Bin Luo • in Bin Luo

EDUCATION

The Chinese University of Hong Kong (CUHK)

Hong Kong, China

Ph.D. Student in Computer Science and Engineering, **GPA: 3.90/4.00**

Aug. 2023 – Present

Advanced Networking and System Research Laboratory (ANSRLab)

Supervised by Choh-Ming Li Chair Prof. John C.S. Lui (IEEE Fellow, ACM Fellow)

Sun Yat-sen University (SYSU)

Guangdong, China

Bachelor of Science, Mathematics and Applied Mathematics, **GPA: 91/100**

Sept. 2019 - June 2023

RESEARCH INTERESTS

My current research focuses on the theory of quantum algorithms and quantum query complexity, with applications to stochastic optimization, reinforcement learning, and quantum networks. In a long run, I hope to show end-to-end quantum advantages for real-world applications which can be validated in simulation/hardware.

PUBLICATIONS

- **Bin Luo**, Chengchang Liu, Jonathan Allcock, Shengyu Zhang, John C.S. Lui. Quantum Speedups for Stochastic Optimization with Heavy-Tailed Noise. arXiv, 2026 (Submitted to NeurIPS'26).
- **Bin Luo**, John C.S. Lui. On the Analysis of a Quantum MDP Algorithm for Optimizing the Entanglement Throughput of Quantum Switches. *24rd International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks*, 2026. WiOpt'26.
- **Bin Luo**, Xiaojun Lin, John C.S. Lui. Structural Property of the Optimal Entanglement Policy for Quantum Network Switch: An MDP Approach. *IEEE/ACM Transactions on Networking*, 2026. ToN'26.
- **Bin Luo**, Yuwen Huang, Jonathan Allcock, Xiaojun Lin, Shengyu Zhang, John C.S. Lui. Quantum Algorithms for Finite-horizon Markov Decision Processes. *Forty-Second International Conference on Machine Learning 2025*. ICML'25.
- **Bin Luo**, Xiaojun Lin, John C.S. Lui. Exploring the Structural Property of the Optimal Entanglement Policy for Quantum Switch. *IEEE Conference on Computer Communications 2025*. INFOCOM'25.
- Yao Xiao, **Bin Luo**, Yuhuan Chen, Pengxu Wei, Liang Lin. Robust Unsupervised Domain Adaptation Image Classification Model Based on Adversarial Distillation. Patent, CN115019106A, 2022.

ONGOING RESEARCH

- **Quantum Query Complexities for Heavy-Tailed Mean Estimation.** Studying the advantages and limitations of quantum algorithms for estimating the mean of heavy-tailed random vectors. Dec. 2025 – Present
- **End-to-end Quantum Advantage Evidence.** Looking for applications on which end-to-end quantum advantages, e.g., runtime or memory, can be shown. Aug. 2026 - Present

INTERNSHIP

Tencent Quantum Laboratory, Tencent

Hong Kong, China

Research Intern, Mentor: Dr. Shengyu Zhang and Dr. Jonathan Allcock

Feb. 2026 – Oct. 2026

- Designed multivariate quantum heavy-tailed mean estimation algorithms and proved quantum lower bounds for heavy-tailed mean estimation problem.

HONORS & AWARDS & GRANTS

China Association for Science and Technology Young Science & Technology Talent Training Program – Doctoral Fellowship, Sponsor: China Science and Technology Development Foundation.	2025
Type-A Student Travel Grant of IEEE INFOCOM	2025
SYSU Outstanding Undergraduate Thesis Award (Top 11 of 170)	2023
Meritorious Winner, Mathematical Contest in Modeling (Top 7% in the world)	2021
SYSU Outstanding Student Second Class Scholarship (Top 10 of 84)	2019 - 2020
SYSU Outstanding Student First Class Scholarship (Top 5 of 84)	2020 - 2021
Excellent Student Cadre of School of Mathematics, SYSU	2019 - 2021
Outstanding Volunteers of School of Mathematics, SYSU	2019 - 2021

PROFESSIONAL SERVICE

Reviewer: INFOCOM 2027, IEEE/ACM Transactions on Networking, ICML 2026 (Gold Reviewer Award), QCNC 2026, ICC 2026.

TEACHING ASSISTANT

CSCI2040: Introduction to Python	Fall 2023-Fall 2024, CUHK
CSCI5370: Quantum Computing	Spring 2025, CUHK
CSCI2040: Introduction to Python	Fall 2025, CUHK
CSCI2040: Introduction to Python	Spring 2026, CUHK

EXTRACURRICULAR ACTIVITIES

Student Union of School of Mathematics, SYSU Sept. 2020 - June 2021

Member of the Presidium

- Coordinated three departments with 30 cadre and officers and organized recruitment, training, and meetings.
- Organized seven large-scale activities with 2,000+ participants and promoted the college's academic events.