

# Qingyu Song

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## EDUCATION

- Ph.D. 2021-2025      Computer Science and Engineering, The Chinese University of Hong Kong, Hong Kong.  
Advisor: Prof. Hong Xu
- M.S. 2018-2021      Control Engineering, Tsinghua University, Beijing, China.  
Advisor: Prof. Jianming Hu
- B.S. 2014-2018      Software Engineering, Harbin Institute of Technology, Weihai, China.  
Advisor: Dr. Xuefeng Piao

## RESEARCH INTEREST

Learning to Optimize: Utilizing machine learning techniques to solve optimization problems.

## PUBLICATIONS

### Conference Proceedings

- C6. **Q. Song**, W. Lin, J. Wang, H. Xu. Towards Robust Learning to Optimize with Theoretical Guarantees. In IEEE/CVF CVPR 2024.
- C5. **Q. Song**, J. Wang, J. Li, G. Liu, H. Xu. A Learning-only Method for Multi-Cell Multi-User MIMO Sum Rate Maximization. In IEEE INFOCOM, 2024.
- C4. Y. Zhang, W. Lin, S. Chen, **Q. Song**, J. Lu, Y. Shao, B. Yu, H. X. Fed2Com: Towards Efficient Compression in Federated Learning. In IEEE ICNC, 2024.
- C3. **Q. Song**, R. Ming, J. Hu, H. Niu, M. Gao. Graph Attention Convolutional Network: Spatiotemporal Modeling for Urban Traffic Prediction. In IEEE ITSC, 2020.
- C2. J. Chen, **Q. Song**, C. Zhao, Z. Li. Graph Database and Relational Database Performance Comparison on a Transportation Network. In International Conference on Advances in Computing and Data Sciences, 2020.
- C1. **Q. Song**, J. Hu, R. Zhang, Y. Zhang. An Urban Topological Map Generation Method for Traffic Flow Prediction Based on Road Segment Clustering with Floating Vehicle Trajectory Dataset. In COTA CICTP, 2019.

### Workshops

- W2. **Q. Song**, G. Liu, H. Xu. Learning to Optimize Non-Convex Sum-Rate Maximization Problems. In ICML 2023, 1st Workshop on Synergy of Scientific and Machine Learning Modeling.
- W1. **Q. Song**, G. Liu, H. Xu. Towards a Learning-Only Approach for Non-Convex Sum Rate Maximization. In ACM SigMetrics 2023, 1st Workshop on Learning-augmented Algorithms: Theory and Applications.

## WORK EXPERIENCE

- Nov 2022 - May 2023 Visiting Student, Huawei  
Project: Learning-based Precoding for MIMO Interference Reduction.  
Advisor: Mr. Guochen Liu
- Mar 2018 - Aug 2018 Undergraduate Research Assistant, Tsinghua University  
Project: Traffic Flow Prediction with Graph Neural Networks.  
Advisor: Prof. Jianming Hu
- Oct 2017 - Jan 2018 Research and Development Intern, NEBULA-LINK Internet Technology Co., Ltd.  
Project: ADAS Android App Development and Data Analysis.  
Advisor: Dr. Yizhi Wang
- May 2016 - Sep 2017 Undergraduate Intern, Harbin Institute of Technology  
Project: Android App Development.  
Advisor: Dr. Xuefeng Piao

## TEACHING ASSISTANT

- Spring 2022 CUHK CSCI 4430 / ESTR 4120, Data Communication and Computer Networks
- Spring 2021 CUHK CSCI 4430, Data Communication and Computer Networks
- Fall 2021 CUHK ENGG 2760A / ESTR 2018: Probability for Engineers

## AWARDS

- Mar 2024 Student Travel Grant, IEEE INFOCOM 2024.
- Jul 2023 Registration Grant, ICML 2023, 1st Workshop on Synergy of Scientific and Machine Learning Modeling
- 2021 - 2025 Postgraduate Studentship, CUHK
- 2019 - 2020 Scholarship with First Honor, Second Honor, SIGS, THU
- Jun 2018 Outstanding Graduate Award at Provincial Level, HIT
- 2015 - 2017 Scholarship with First Honor, Second Honor, HIT

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