

Enming Liang

☎ +852-54958047 | @ eliang4@cityu.edu.hk | 📍 Hong Kong

🔍 Google Scholar | 🌐 Personal Webpage | 🔗 LinkedIn

Updated: 2025-5-1

RESEARCH INTERESTS

AI for Optimization, Generative Models, with Applications in Mobility, Energy, and Climate.

EMPLOYMENT

Research Assistant Professor

City University of Hong Kong | College of Computing

Hong Kong

2025/01 – Present

EDUCATION

City University of Hong Kong

Ph.D. | Department of Data Science

Advisor: Prof. Minghua Chen

Hong Kong

2021/09 – 2024/10

- Thesis: ML for Constrained Optimization: Solution Feasibility and Multi-valued Mapping

Sun Yat-sen University

B.Eng. | School of Intelligent Systems Engineering

Advisor: Prof. Renxin Zhong

Guangzhou

2016/09 – 2020/07

- GPA: 91/100, Rank: 1/47
- Thesis: Optimal Supply and Demand Management in Ride-sourcing Platform

RESEARCH EXPERIENCE

Cambridge University

Visiting Researcher | Advisor: Prof. Srinivasan Keshav

Cambridge

2024/05 – 2024/06

- Resilience of European Transimission Grid under Extreme Weather

Microsoft Research Asia

Research Intern | Advisor: Dr. Li Zhao & Dr. Lei Song

Beijing

2022/05 – 2022/09

- Data-Driven Optimization for Vehicle Routing Problem
- Multi-Agent Resource Optimization (MARO) platform

Huawei Noah's Ark Lab

Research Intern | Advisor: Dr. Zhitang Chen & Dr. Jie Chuai

Shenzhen

2020/10 – 2021/04

- Collaborative Optimization for Large-scale 4G LTE Cell Networks
- Scenario-based Optimization for High-Dimension 5G RF Parameters

Didi Chuxing & SYSU Research Cooperation Program

Research Assistant | Advisor: Prof. Renxin Zhong

Guangzhou

2018/11 – 2020/05

- A Multi-Agent Reinforcement Learning Approach for Online Vehicle Dispatching
- Dynamic Spatial-Temporal Pricing for Supply-demand Regulations of Ride-sourcing Market

Guangdong Key Laboratory of Intelligent Transportation Systems

Research Assistant | Advisor: Prof. Renxin Zhong

Guangzhou

2018/04 – 2018/10

- The Calibration of First-Order Macroscopic Traffic Models Using MF-CEM

CONFERENCE PROCEEDINGS

∗: Co-first; †: Co-corresponding

▷ Efficient Bisection Projection to Ensure NN Solution Feasibility for Optimization over General Set.
Enming Liang, Minghua Chen.

In Proceedings of the Forty-second International Conference on Machine Learning (**ICML’2025**).

▷ DFF: Decision-Focused Fine-tuning for Smarter Predict-then-Optimize with Limited Data.

Jiaqi Yang[∗], Enming Liang[∗], Zicheng Su, Zhichao Zou, Zhen Peng, Jiecheng Guo, Kun An, Wanjing Ma.

In Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI’2025**). **Oral**.

▷ Characterizing ResNet’s Universal Approximation Capability.

Chenghao Liu, Enming Liang, Minghua Chen.

In Proceedings of the Forty-first International Conference on Machine Learning (**ICML’2024**).

▷ Generative Learning for Solving Non-Convex Problem with Multi-Valued Input-Solution Mapping.

Enming Liang, Minghua Chen.

In Proceedings of the Twelfth International Conference on Learning Representations (**ICLR’2024**).

▷ Low Complexity Homeomorphic Projection to Ensure NN Solution Feasibility for Optimization over (Non-)Convex Set.

Enming Liang, Minghua Chen, Steven H. Low.

In Proceedings of the Fortieth International Conference on Machine Learning (**ICML’2023**).

▷ OAM: an Option-Action Reinforcement Learning Framework for Universal Multi-Intersection Control.

Enming Liang, Zicheng Su, Chilin Fang, Renxin Zhong.

In Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI’2022**). **Oral**.

WORKSHOP PAPERS

▷ Gauge Flow Matching for Efficient Constrained Generative Modeling over General Convex Set.

Xinpeng Li[∗], Enming Liang[∗], Minghua Chen.

ICLR 2025, DeLTa workshop. Oral & Outstanding Short Paper Award.

▷ Solving Chance-Constrained AC-OPF Problems by Neural Network with Bisection-based Projection.

Enming Liang[∗], Min Zhou[∗], Jiawei Zhao, Minghua Chen.

ACM E-energy 2025, EnergySP workshop. Invited Paper.

JOURNAL PUBLICATIONS

▷ Homeomorphic Projection to Ensure Neural-Network Solution Feasibility for Constrained Optimization.

Enming Liang, Minghua Chen, Steven H. Low.

Journal of Machine Learning Research (**JMLR**). 2024

▷ Hierarchical Control for Stochastic Network Traffic with Reinforcement Learning.

Zicheng Su, Andy H.F. Chow, Chilin Fang, Enming Liang, Renxin Zhong.

Transportation Research Part B: Methodological (**TRB**). 2023.

▷ An Integrated Reinforcement Learning and Centralized Programming Approach for Online Taxi Dispatching.

Enming Liang, Kexin Wen, William H.K. Lam, Agachai Sumalee, Renxin Zhong.

IEEE Transactions on Neural Networks and Learning Systems (**IEEE TNNLS**). 2021.

▷ Adaptive Signal Control for Bus Service Reliability with Connected Vehicle Technology via Reinforcement Learning.

Andy H.F. Chow, Zicheng Su, **Enming Liang**, Renxin Zhong.

Transportation Research Part C: Emerging Technologies (**TRC**). 2021.

▷ Neuro-Dynamic Programming for Optimal Control of Macroscopic Fundamental Diagram Systems.

Zicheng Su, Andy H.F. Chow, Nan Zheng, Yunping Huang, **Enming Liang**, Renxin Zhong.

Transportation Research Part C: Emerging Technologies (**TRC**). 2020.

TUTORIALS

▷ AI for Optimal Power Flow Tutorial.

Enming Liang, Priya L. Donti, and Minghua Chen.

Climate Change AI Summer School. 2024.

GRANTS & FUNDS

CCF-DiDi GAIA Collaborative Research Funds 2024

Co-PI | (PI: Dr. Zicheng Su from Tongji University)

- Optimal Subsidy Design for Ride-Sourcing Platform

CCF-DiDi GAIA Collaborative Research Funds 2023

Co-PI | (PI: Dr. Zicheng Su from Tongji University)

- Decision-Focused Learning for Ride-Sourcing Platform

COMPETITION PRIZES

KDD CUP: Learning to Dispatch and Reposition on a Mobility-on-Demand Platform Top 2 (0.1%) Solo winner	2020
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Huawei & ICAPS: Dynamic Pickup and Delivery Problem Competition Silver Prize (0.2%)	2021
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MeiTuan 1st Low-Altitude Economy Flight Management Challenge Silver Prize (1%)	2024
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AWARDS & HONORS

Top Reviewer Award in NeurIPS 2024	2024
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Outstanding Academic Performance Award CityU HK	2023
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Excellence Award in <i>Star of Tomorrow Internship Program</i>, MSRA	2022
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Research Tuition Scholarship CityU HK	2022 & 2023
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Outstanding Undergraduate Thesis SYSU	2020
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National Scholarship China	2020
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TUTORIAL & TEACHING

Teacher at CityU, HK

2025-2027

- 2025/26 Semester B | SDSC3060 Operations Research

Teaching Assistant at CityU, HK

2021-2024

- 2021/22 Semester B | SDSC3060 Operations Research
- 2022/23 Semester A | SDSC3019 Intro to Networked Life & DS
- 2022/23 Semester B | SDSC6014 Networked Life & Data Science
- 2023/24 Semester B | SDSC6014 Networked Life & Data Science

PROFESSIONAL SERVICES

Conference Reviewer

2023-2025

- International Conference on Machine Learning (ICML) 2025
- International Conference on Learning Representations (ICLR) 2025
- Conference on Neural Information Processing Systems (NeurIPS) 2024
- Annual AAAI Conference on Artificial Intelligence (AAAI) 2023/2024/2025
- International Conference on Artificial Intelligence and Statistics (AISTATS) 2025

Journal Reviewer

2023-2025

- Transcation on Machine Learning Research (TMLR)
- Transportation Research Part E
- Transportmetrica B
- Neural Computing
- IEEE Power Engineering Letters