

QIHAO WU (JIMMY)

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EDUCATION

The University of Hong Kong Ph.D. Candidate in Data-driven Modeling and Healthcare Operations Management, Faculty of Engineering Supervisor: Prof. Yong-Hong Kuo	2021.09 - 2026.06.
CentraleSupélec, Paris-Saclay University Exchange Ph.D. Student Supervisor: Prof. Abdel Lisser	2024.03 - 2024.07
Imperial College London M.Sc. in Computational Methods, Faculty of Engineering	2019.09 - 2020.11
University of Wollongong B.Eng. in Mechatronics with Joint Degree	2018.02 - 2019.06
Beijing Jiaotong University B.Eng. in Mechatronics, Faculty of Engineering and Information Sciences	2015.09 - 2019.06

RESEARCH INTERESTS

Methodologies: Markov decision process, deep reinforcement learning, machine learning, explainable AI, robust optimization
Applications: Healthcare operations management, health informatics, transportation, scheduling, forecasting, causal inference

PUBLICATIONS

Journal Articles Published

1. **Wu, Qihao**, Jiangxue Han, Yimo Yan, Yong-Hong Kuo, Zuo-Jun Max Shen. “Reinforcement Learning for Healthcare Operations Management: Methodological Framework, Recent Developments, and Future Research Directions.” **Health Care Management Science** (2025): 1-36.
2. Yan, Yimo, Haomin Wen, Yang Deng, Andy Chow, **Qihao Wu**, Yong-Hong Kuo. “A Mixed Integer Linear Programming-Based Reinforcement Learning Framework for Electric Bus Scheduling with Multiple Termini and Service Routes.” **Transportation Research Part C: Emerging Technologies** 162 (2024): 104570.
3. **Wu, Qihao**, Sunny Ching-long Chan, Teddy Tai-loy Lee, Kevin Wang-leong So, Omar Wai-kiu Tsui, Yong-Hong Kuo, Timothy Hudson Rainer, and Abraham Ka-chung Wai. “Evaluating the Patient Boarding during Omicron Surge in Hong Kong: Time Series Analysis.” **Journal of Medical Systems** 47, no. 1 (2023): 76.
4. Deng, Lei, Shuaishuai Sun, **Qihao Wu**, Ning Gong, Jiang Yang, Shiwu Zhang, Haiping Du, and Weihua Li. “A New Magnetorheological Quasi-zero Stiffness Vibration Isolation System with Large Zero Stiffness Range and Highly Stable Characteristics.” **Nonlinear Dynamics** 111, no. 20 (2023): 18631-18653.
5. Yan, Yimo, Andy HF Chow, Chin Pang Ho, Yong-Hong Kuo, **Qihao Wu**, and Chengshuo Ying. “Reinforcement Learning for Logistics and Supply Chain Management: Methodologies, State of the Art, and Future Opportunities.” **Transportation Research Part E: Logistics and Transportation Review** 162 (2022): 102712.

Journal Articles Submitted

1. **Wu, Qihao**, Ting Fung Ma, Yong-Hong Kuo, Chun Yip Yau, Terrance H.L. Cheung. “Used Car Pricing with Interpretable Machine Learning and Analysis of Marginal Effects.” Under Major revision at **IEEE Transactions on Engineering Management**.

Selected Working Papers

1. “Equity in Access to Care: Appointment Scheduling across Patient Groups with Varied No-Show Rates”
 - Present at INFORMS M&SOM Conference, June 2025, London.
 - Present at European Conference on Operational Research, June 2025, Leeds.
 - The First Place Award in the University of Liverpool Research Presentation Competition, June 2025, Liverpool.
2. “Robust Inpatient Management with Patient Reallocations”
 - Poster at INFORMS Annual Meeting, October 2024, Seattle.
 - Best Student Poster Award at the International Conference on Primary Care Ecosystem, March 2024, Hong Kong.

“*” indicates the corresponding author.

PROFESSIONAL SERVICES

Journal Reviewer: PLOS One, Transportation Research Part E: Logistics and Transportation Review, IEEE Transactions on Engineering Management.
Conference Helper: Hong Kong Society for Transportation Studies 2022, The 1st ORSHK Young Researchers Workshop 2022.

INVITED PRESENTATIONS & CONFERENCES

- INFORMS M&SOM Conference, “Equity in Access to Care: Appointment Scheduling across Patient Groups with Varied No-Show Rates,” June 2025, London.
- European Conference on Operational Research, “Equity in Access to Care: Appointment Scheduling across Patient Groups with Varied No-Show Rates,” June 2025, Leeds.
- INFORMS Annual Meeting, “Inpatient Management with Reinforcement Learning Poster,” October 2024, Seattle.
- The International Forum on Quality and Safety in Healthcare by the Institute for Healthcare Improvement (IHI) and BMJ Group, August 2024, Hong Kong.
- European Conference on Operational Research, “Data-driven Interpretable Pricing with Machine Learning,” July 2024, Copenhagen.
- International Conference on Primary Care Ecosystem, “Inpatient Management with Reinforcement Learning considering Primary Care and Ageing Population,” March 2024, Hong Kong.
- POMS Annual Conference, “Evaluating Hospital Access Block under the Pandemic: Time Series Analysis,” April 2023, Orlando.
- POMS-HK International Conference, “Evaluating Hospital Access Block under the Pandemic: Time Series Analysis,” January 2023, Hong Kong.

TEACHING AND EDUCATIONAL EXPERIENCE

Mentor of Students in Healthcare Analytics Research Group

HKU, 2023 - 2025

Selected projects to be published:

- “Data-driven Prediction of Inpatient Length of Stay in Hong Kong Emergency Departments,” with Zhaoyun Cai (HKU MSc), etc.
- “Causal Inference with Electronic Health Records,” with Yijun He (HKU BSc), etc.
- “Time Series Patterns of Patients’ Arrivals and Discharges,” with Rayan Rahman (HKU BSc), etc.
- “Non-invasive ABP Synthesis from PPG via CNN-LSTM-Attention and its Multi-Model Time Series Forecasting,” with Bo Hu (HKU MSc), etc.

DASE 3136 Operations Planning and Control (Teaching Assistant)

HKU, Fall Semester 2024

IMSE 4136 Transportation and Distribution Planning (Teaching Assistant)

HKU, Spring Semester 2024

IMSE 4119 Digital Enterprises and E-commerce (Lab Instructor)

HKU, Fall Semesters 2023

IMSE 7119 Digital Enterprises and E-commerce (Lab Instructor)

HKU, Spring Semesters 2023

INDUSTRY COLLABORATIONS

Longlife Investment Ltd., Shanghai

2023.11 - 2024.02

Quantitative Research Intern

Deployed policy gradient for stock multifactor models to optimize portfolio (Alpha 15%).

J.P. Morgan, Machine Learning Center of Excellence Exercise

2023.10 - 2024.02

Student Researcher

Designed a stochastic Tic-Tac-Toe game and optimized the policy of zero-sum game by deep Q network.

The Data Analysis Bureau Ltd., London

2020.01 - 2020.09

Student Researcher in Time Series Analysis of IT Operation Analytics

Detected 5M+ real-time data to cluster 42 IT servers’ anomalies (pulses, ramps, mean-shift).

PROGRAMMING SKILLS AND LANGUAGES

Programming skills: Python, Matlab, C++.

Languages: English (fluent), Mandarin (native), Cantonese.

SELECTED AWARDS AND HONORS

The First Place Award in the Research Presentation Competition organized by the University of Liverpool

2025.06

Best Student Poster Award (Finalist) at International Conference on Primary Care Ecosystem

2024.03

HKU Foundation Postgraduate Fellowship

2021.09

Outstanding Graduate of Beijing (Top 5%, 10/300+)

2019.07

Dean’s Merit Award in Australia, 50% Tuition Fee Reduction Excellence (GPA of 4.0)

2018.02 & 2019.02

National (Mainland China) Innovation Nominations (FSAE & UAV)

2016.10 & 2017.10