QIHAO WU (JIMMY)

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EDUCATION

The University of Hong Kong *2021.09 - 2026.06.*
Ph.D. Candidate in Data-driven Modeling and Healthcare Operations Management, Faculty of Engineering
Supervisor: Prof. Yong-Hong Kuo

CentraleSupélec, Paris-Saclay University *2024.03 - 2024.07*
Exchange Ph.D. Student
Supervisor: Prof. Abdel Lisser

Imperial College London *2019.09 - 2020.11*
M.Sc. in Computational Methods, Faculty of Engineering

University of Wollongong *2018.02 - 2019.06*
B.Eng. in Mechatronics with Joint Degree

Beijing Jiaotong University *2015.09 - 2019.06*
B.Eng. in Mechatronics, Faculty of Engineering and Information Sciences

RESEARCH INTERESTS

Applications: Healthcare operations management, scheduling, forecasting
Methodologies: Markov decision process, deep reinforcement learning, machine learning, robust optimization

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 Marginal Effects." Under Major revision.

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 Admission and Length of Stay," 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.

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*