

QIHAO WU (JIMMY)

8-23, 8F, Haking Wong Building, The University of Hong Kong
(+852) 5633 8573 / (+86) 182 1190 9700 — qihao.wu@connect.hku.hk — <https://qihao-wu.github.io/bio/>

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 Reallocation”
 - 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 Selected projects to be published: | <i>HKU, 2023 - 2025</i> |
| • "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. | <i>HKU, Fall Semester 2024</i> |
| • "Time Series Patterns of Patients' Arrivals and Discharges," with Rayan Rahman (HKU BSc), etc. | <i>HKU, Spring Semester 2024</i> |
| • "Non-invasive ABP Synthesis from PPG via CNN-LSTM-Attention and its Multi-Model Time Series Forecasting," with Bo Hu (HKU MSc), etc. | <i>HKU, Fall Semesters 2023</i> |
| DASE 3136 Operations Planning and Control (Teaching Assistant) | <i>HKU, Spring Semesters 2023</i> |
| IMSE 4136 Transportation and Distribution Planning (Teaching Assistant) | |
| IMSE 4119 Digital Enterprises and E-commerce (Lab Instructor) | |
| IMSE 7119 Digital Enterprises and E-commerce (Lab Instructor) | <i>HKU, Spring Semesters 2023</i> |

INDUSTRY COLLABORATIONS

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Longlife Investment Ltd., Shanghai <i>Quantitative Research Intern</i> Deployed policy gradient for stock multifactor models to optimize portfolio (Alpha 15%). | <i>2023.11 - 2024.02</i> |
| J.P. Morgan, Machine Learning Center of Excellence Exercise <i>Student Researcher</i> Designed a stochastic Tic-Tac-Toe game and optimized the policy of zero-sum game by deep Q network. | <i>2023.10 - 2024.02</i> |
| The Data Analysis Bureau Ltd., London <i>Student Researcher in Time Series Analysis of IT Operation Analytics</i> Detected 5M+ real-time data to cluster 42 IT servers' anomalies (pulses, ramps, mean-shift). | <i>2020.01 - 2020.09</i> |

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 | <i>2025.06</i> |
| Best Student Poster Award (Finalist) at International Conference on Primary Care Ecosystem | <i>2024.03</i> |
| HKU Foundation Postgraduate Fellowship | <i>2021.09</i> |
| Outstanding Graduate of Beijing (Top 5%, 10/300+) | <i>2019.07</i> |
| Dean's Merit Award in Australia, 50% Tuition Fee Reduction Excellence (GPA of 4.0) | <i>2018.02 & 2019.02</i> |
| National (Mainland China) Innovation Nominations (FSAE & UAV) | <i>2016.10 & 2017.10</i> |