

# QIHAO WU (JIMMY)

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## EDUCATION

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<b>The University of Hong Kong</b> Ph.D. Candidate in Data Analytics and Data Intensive Modeling, Department of Data and Systems Engineering, Faculty of Engineering Primary Supervisor: Prof. Yong-Hong Kuo, Co-Supervisor: Prof. G.Q. Huang	2021.09 - 2026.06.
<b>CentraleSupélec, Paris-Saclay University</b> Visiting Researcher at Laboratoire des Signaux et Systèmes (Laboratory L2S) Supervisor: Prof. Abdel Lisser	2024.03 - 2024.07
<b>Imperial College London</b> M.Sc. in Advanced Computational Methods, Department of Aeronautics, Faculty of Engineering	2019.09 - 2020.11
<b>University of Wollongong</b> B.Eng. (Honours) in Mechatronic Engineering with Joint Degree, School of Mechanical, Materials, Mechatronic and Biomedical Engineering, Faculty of Engineering and Information Sciences	2018.02 - 2019.06
<b>Beijing Jiaotong University</b> B.Eng. in Mechatronic Engineering, School of Mechanical, Electronic and Control Engineering	2015.09 - 2019.06

## RESEARCH INTERESTS

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**Methodologies:** Markov decision process, machine learning, reinforcement learning, operations research

**Applications:** Healthcare operations, health informatics, transportation, scheduling

## PUBLICATIONS

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### Journal Articles Published

1. Wu, Qihao, Jiangxue Han, Yimo Yan, Yong-Hong Kuo, and Zuo-Jun Max Shen. "Reinforcement learning for healthcare operations management: methodological framework, recent developments, and future research directions." **Health Care Management Science** 28, no. 2 (2025): 298.
2. Yan, Yimo, Haomin Wen, Yang Deng, Andy Chow, Qihao Wu, Yong-Hong Kuo. "A mixed-integer programming-based Q-learning approach 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. "Explainable Used Car Pricing: A Machine Learning Framework with Analysis of Marginal Effects." Under Minor 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.

## PROFESSIONAL SERVICES

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Journal Reviewer: Transportation Research Part E: Logistics and Transportation Review, IEEE Transactions on Engineering Management, PLOS One.

Conference Helper: Hong Kong Society for Transportation Studies 2022, The 1st ORSHK Young Researchers Workshop 2022.

## **INVITED PRESENTATIONS & CONFERENCES**

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- 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**

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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.	
• "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)	<i>HKU, Fall Semester 2024</i>
IMSE 4136 Transportation and Distribution Planning (Teaching Assistant)	<i>HKU, Spring Semester 2024</i>
IMSE 4119 Digital Enterprises and E-commerce (Lab Instructor)	<i>HKU, Fall Semesters 2023</i>
IMSE 7119 Digital Enterprises and E-commerce (Lab Instructor)	<i>HKU, Spring Semesters 2023</i>

## **INDUSTRY COLLABORATIONS**

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<b>Longlife Investment Ltd., Shanghai</b> <i>Quantitative Research Intern</i>	<i>2023.11 - 2024.02</i>
Deployed policy gradient for stock multifactor models to optimize portfolio (Alpha 15%).	
<b>J.P. Morgan, Machine Learning Center of Excellence Exercise</b> <i>Student Researcher</i>	<i>2023.10 - 2024.02</i>
Designed a stochastic Tic-Tac-Toe game and optimized the policy of zero-sum game by deep Q network.	

## **PROGRAMMING SKILLS AND LANGUAGES**

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Programming skills: Python, Matlab, C++.  
Languages: English (fluent), Mandarin (native), Cantonese.

## **SELECTED AWARDS AND HONORS**

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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 &amp; 2019.02</i>
National (Mainland China) Innovation Nominations (FSAE & UAV)	<i>2016.10 &amp; 2017.10</i>

## REFERENCES

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**Prof. Ka Chung Abraham Wai**

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**Prof. Haolin Feng**

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