

## Ho-Yin Mak

**McDonough School of Business**  
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### ACADEMIC APPOINTMENTS

<b>Georgetown University</b> Associate Professor in Operations & Information Management, McDonough School of Business	2022–Current
<b>The Alan Turing Institute, London</b> Turing Fellow	2021–2023
<b>University of Oxford</b> Associate Professor in Management Science, Saïd Business School Fellow, St Cross College	2015–2022
<b>The Hong Kong University of Science &amp; Technology</b> Assistant Professor of Industrial Engineering & Logistics Management	2009–2015

### EDUCATION

<i>Doctor of Philosophy</i> , Industrial Engineering & Operations Research University of California at Berkeley	2009
<i>Master of Science</i> , Industrial Engineering & Operations Research University of California at Berkeley	2006
<i>Bachelor of Science</i> , Industrial Engineering & Management Sciences and Economics Northwestern University	2005

### RESEARCH INTERESTS

#### Methodology

- Mathematical Programming: data-driven, stochastic, and robust optimization
- Machine learning & AI: reinforcement learning, dimensionality reduction, deep learning
- Large-scale computational optimization
- Game theory

#### Smart City Operations

- Mobility: electric vehicles, mobility as a service, car and ride sharing, smart parking
- Energy: smart and renewable energy, vehicle-to-grid operations
- Interfaces with sustainable operations, sharing economy, and health care

#### Supply Chain Management

- Sustainability in supply chains
- Technology-enabled supply chain management, omnichannel retail, smart logistics
- Supply chain design and coordination

## REFEREED PUBLICATIONS

1. L. He and H.Y. Mak (2023). Prescriptive PCA: Dimensionality Reduction for Stochastic Optimization. **Proceedings of the 29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD '23)**, 711-721.
2. S. Arora, J.W. Taylor and H.Y. Mak (2023). Probabilistic Forecasting of Patient Waiting Times in an Emergency Department. **Manufacturing & Service Operations Management**, 25(4), 1489-1508.
3. H.Y. Mak, T. Dai and C.S. Tang (2022). Managing Two-Dose COVID-19 Vaccine Rollouts with Limited Supply. **Production & Operations Management**, 31(12), 4424-4442.
4. H.Y. Mak (2022). Enabling Smarter Cities with Operations Management. **Manufacturing & Service Operations Management**, 24 (1), 24-39.
5. H.Y. Mak and Z.J.M. Shen (2021). When Triple-A Supply Chains Meet Digitalization: The Case of JD.com's C2M Model. **Production & Operations Management**, 30 (3), 656-665.
6. M. Qi, H.Y. Mak and Z.J.M. Shen (2020). Data-Driven Research in Retail Operations - A Review. **Naval Research Logistics**, 67(8), 595-616. .
7. M.K. Lim, H.Y. Mak and S.J. Park (2019). Money Well Spent? Operations, Mainstreaming, and Fairness of Fair Trade. **Production & Operations Management**, 28(2), 3023-3041.
8. G. Ma, M.K. Lim, H.Y. Mak and Z. Wan (2019). Promoting Clean Technology Adoption: To Subsidize Products or Infrastructure? **Service Science**, 11(2), 75-95.
9. J. Acimovic, M.K. Lim and H.Y. Mak (2018). Moving Beyond the Speed-Price Trade-off. **MIT Sloan Management Review**, 59(4), 13-15.
10. L. He, H.Y. Mak, Y. Rong and Z.J.M. Shen (2017). Service Region Design for Urban Electric Vehicle Sharing Systems. **Manufacturing & Service Operations Management**, 19(2), 309-327.
11. M.K. Lim, H.Y. Mak and Z.J.M. Shen (2017). Proximity and Agility Considerations in Supply Chain Design. **Management Science**, 63(4), 1026-1041.
12. H.Y. Mak, Y. Rong and J. Zhang (2015). Appointment Scheduling with Limited Distributional Information. **Management Science**, 61(2), 316-334.
13. M.K. Lim, H.Y. Mak and Y. Rong (2015). Toward Mass Adoption of Electric Vehicles – Impacts of the Range and Resale Anxieties. **Manufacturing & Service Operations Management**, 17(1), 101-119.
14. S. Bhatti, M.K. Lim and H.Y. Mak (2014). Alternative Fuel Station Location Model with Demand Learning, **Annals of Operations Research**, 230(1), 105-127.
15. H.Y. Mak, Y. Rong and J. Zhang (2014). Sequencing Surgeries for Operating Rooms Using Inventory Approximations. **Manufacturing & Service Operations Management**, 16(4), 251-262.
16. H.Y. Mak and Z.J.M. Shen (2014). Pooling and Dependence of Demand and Yield in Multiple- Location Inventory Systems. **Manufacturing & Service Operations Management**, 16(4), 263-269.
17. H.Y. Mak, Y. Rong and Z.J.M. Shen (2013). Infrastructure Planning for Electric Vehicles with Battery Swapping. **Management Science**, 59(7), 1557-1575
18. H.Y. Mak and Z.J.M. Shen (2012). Risk Diversification and Risk Pooling in Supply Chain Design. **IIE Transactions**, 44(8), 603-621.
19. G. Ma and H.Y. Mak (2012). Strategic Deployment of Infrastructure for Electric Vehicles. **Proceedings of the 17th International Conference of the Hong Kong Society for Transportation Studies**, pp. 367-374.
20. H.Y. Mak and Z.J.M. Shen (2010). Stochastic Programming Approach to Process Flexibility Design. **Journal of Flexible Services & Manufacturing**, 21(3-4), 75-91.
21. H.Y. Mak and Z.J.M. Shen (2009). A Two-Echelon Inventory-Location Problem with Service Considerations. **Naval Research Logistics**, 56(8), 730-744.

### SELECTED WORKING PAPERS

1. H.Y. Mak. Peer-to-Peer Crowdsourcing as an Omnichannel Retail Strategy. Under Revision.
2. H.Y. Mak and Runyu Tang. Collaborative Vehicle-to-grid Operations in Frequency Regulation Markets. Under Minor Revision for **Manufacturing & Service Operations Management**.
3. L. He and H.Y. Mak. Prescriptive PCA: Dimensionality Reduction for Stochastic Optimization. Under Review.

### BOOK AND BOOK CHAPTERS

1. L. He, H.Y. Mak and Y. Rong (2019). Operations Management of Vehicle Sharing Systems, in **Sharing Economy: Making Supply Meet Demand**. (pp.461-484). Springer Series in Supply Chain Management.
2. H.Y. Mak and Z.J.M. Shen (2016). **Integrated Modeling for Location Analysis**. Now Publishers, Boston - Delft.
3. H.T. Tsang and H.Y. Mak (2015). Robust Optimization Approach to Empty Container Repositioning in Liner Shipping, in **Handbook of Ocean Container Transport Logistics** (pp. 209-229). Springer International Publishing, Switzerland.
4. H.Y. Mak and Z.J.M. Shen (2011). Integrated Supply Chain Design Models, in **Wiley Encyclopedia of Operations Research and Management Science**, Wiley Online Library.

### RESEARCH RECOGNITIONS

- Meta (Facebook) Research Award for Mathematical Modeling and Optimization for Large-Scale Distributed Systems, 2021
- Turing Fellowship, The Alan Turing Institute (UK's national research institute on data science & artificial intelligence), Since 2021
- Manufacturing & Service Operations Management (M&SOM) Journal Best Paper Award, 2019
- INFORMS Transportation Science & Logistics (TSL) Society Best Paper Award, 2019
- Manufacturing & Service Operations Management (M&SOM) Journal Best Paper Award, 2018
- INFORMS Energy, Natural Resources & Environment (ENRE) Young Researcher Prize, First Prize, 2014
- Columbia University Chazen Institute of International Business CSAMSE Conference Best Paper Award, Third Prize, 2012
- INFORMS SOLA-Air Products Dissertation Award, Honorable Mention, 2009

### TEACHING RECOGNITIONS

- Poets & Quants Best 40 Under 40 Business School Professors, 2019
- Nomination for Most Acclaimed Lecturer Award, Oxford University Student Union, 2017
- Nomination for Michael Gale Medal for Teaching Excellence, The Hong Kong University of Science & Technology, 2014
- School of Engineering Teaching Appreciation Award, The Hong Kong University of Science & Technology, 2013
- Best Ten Lecturers Award, The Hong Kong University of Science & Technology, 2012

## COURSES TAUGHT

### Georgetown University

- OPIM 570: Analytical Problem Solving 2023
  - MBA core course on analytical modeling, optimization, and simulation, with business applications
- OPIM 220: Modeling Analytics 2023
  - Undergraduate core course on analytical modeling, optimization, and simulation, with business applications

### University of Oxford

- Analytics 2015–2022
  - MBA (2015–2022) and EMBA (2021–2022) core course on data-driven decision making with business applications
  - Lecture materials and case exercises redesigned to incorporate new topics (e.g., machine learning, AI) and to focus on practical problems, e.g., in supply chain and service operations
  - Content and delivery format redesigned for hybrid (MBA) and online (EMBA) learning modes under COVID-19 pandemic in 2020-22
- Smart City Analytics Summer 2017
  - New MBA elective course on data-driven management of smart cities
  - New lecture and case materials developed (on smart mobility and smart energy)
- Strategic AI Applications in Smart Cities Spring 2021–2022
  - New executive diploma session on strategies of AI-enabled businesses in smart cities, e.g., with autonomous vehicles

### Hong Kong University of Science & Technology

- IELM 3450: Logistics Planning and Service Management Fall 2009–2013
  - Undergraduate core course on logistics and supply chain management
- IELM 2410: Logistics and Freight Transportation Operations Spring 2010–2015
  - Undergraduate core course on logistics management
- IELM 3901: Transportation Systems Spring 2015
  - Undergraduate core course on transportation system design and operations
- IELM 6300A: Supply Chain Design and Operations Spring 2012
  - PhD-level course on advanced topics in supply chain optimization
- ENGG 1001D: Making Smarter Decisions with Engineering Ideas Summer 2011–2012
  - New undergraduate-level course for talented high school students
  - Demonstration of management science and decision making methodologies in real-life applications

### University of California at Berkeley

- IEOR 253: Supply Chain Design & Operations Spring 2008–2009
  - New PhD course on advanced topics in supply chain optimization
  - Lecture and project materials co-developed with Z.J. Max Shen (Berkeley)

## PHD STUDENTS ADVISED

- Guangrui MA, PhD 2014, HKUST
  - Placement: Assistant Professor, College of Management & Economics, Tianjin University
- Yan LI, PhD 2015, HKUST
  - Placement: Cainiao Network, Alibaba Logistics, Hangzhou, China
- Ho-Tak TSANG (Co-advised with Ying-Ju Chen and Jin Qi), PhD 2017, HKUST
  - Placement: Visiting Fellow, City University of Hong Kong
- Shihong XIAO (Co-advised with Ying-Ju Chen), PhD 2018, HKUST
  - Placement: Post-Doc Fellow, University of Minnesota

## COMPETITIVE RESEARCH GRANTS

- Meta (Facebook) Research Award for Mathematical Modeling and Optimization for Large-Scale Distributed Systems, 2021
- Analytical Study of Dynamic Supply Chain Network Configurations. PI, Hong Kong Research Grants Council – General Research Fund (2014–2017).
- Operational Challenges for One-Way Car Sharing Services. PI, Hong Kong Research Grants Council – General Research Fund (2013–2016)
- Towards Mass Adoption of Electric Vehicles - Overcoming the Range and Resale Anxieties. PI, Hong Kong Research Grants Council – Early Career Scheme, (2013–2015)
- Fleet Management for Electric Vehicles: A First Step towards Green Logistics. PI, Hong Kong University Grants Committee – Targets of Opportunity Fund, (2011–2014)
- Transforming Hong Kong's Ocean Container Transport Logistics Network. Co-PI (Project Coordinator: Chung-Yee Lee), Hong Kong Research Grants Council – Theme-Based Research Scheme (2011–2016)

## EDITORIAL AND PROFESSIONAL SERVICE

- Editor, Naval Research Logistics: Special Issue on Data Analytics under Emerging Supply Chain and Logistics Innovations
- Associate Editor, Management Science: Special Issue on Business & Climate Change (since 2019)
- Associate Editor, Manufacturing & Service Operations Management (since 2019)
- Senior Editor, Production & Operations Management (since 2018)
- Associate Editor, Service Science (since 2019)
- Associate Editor, Transportmetrica B (since 2012)
- Associate Editor, Transportation Science (since 2021)
- Associate Editor, Travel Behaviour & Society (2013-2016)
- Member of UK Delegation to US and Canada, for public and private sector engagements on Clean Growth (2018)
- Conference Co-Chair and Proceedings Editor, Hong Kong Society for Transportation Studies (HKSTS) International Conference (2012)
- Track Chair for Sustainable Operations track, Production & Operations Management Society (POMS) Annual Conference (2019)

- Track Chair for Environmental Operations track, Production & Operations Management Society (POMS) Annual Conference (2017)
- Judge, Student paper competition, Production & Operations Management Society (POMS) Hong Kong Conference (2017)
- Discussant, Sustainable Operations Special Interest Group (SIG) Meeting at Manufacturing & Service Operations Management (MSOM) Conference (2014, 2021)
- Organizing Committee Member, Hong Kong Society for Transportation Studies (HKSTS) International Conference (2011, 2012, 2013, 2014, 2015)
- Session Chair, INFORMS Annual Meetings (various years), Manufacturing & Service Operations Management (MSOM) Conference (New York 2012), Production & Operations Management Society (POMS) International Conference (Singapore 2014), Production & Operations Management Society (POMS) Hong Kong International Conference (Hong Kong 2014)
- Board Member & Deputy Secretary, Hong Kong Society for Transportation Studies (2013-2016)
- Youth Development Committee Chair, Institute of Industrial Engineers, Hong Kong (2010-2011)
- Referee for Management Science, Operations Research, Manufacturing & Service Operations Management, Production & Operations Management, Journal of Operations Management, California Management Review, IIE Transactions, INFORMS Journal on Computing, Naval Research Logistics, Transportation Science, Transportation Research Part B, Transport Economics, International Journal of Sustainable Transportation, Journal of the Operational Research Society

## **UNIVERSITY SERVICE**

### **Georgetown University**

- Data, Design & Technology Committee, McDonough School of Business (2022-Current)

### **University of Oxford**

- Associate Academic Director of MBA programme (2019-2020)
- MBA review committee (since 2018-2020)
- Internal examiner for MBA programme (2017–2022)
- Internal examiner for EMBA programme (2022)
- Recruitment panel for Associate Professor position in Management Science (2016-2017)
- Recruitment panel for Career Development Fellow position in Management Science (2017)
- College advisor for Master's and DPhil students at St Cross College (since 2015)
- Academic supervisor for MBA students at Saïd Business School (since 2015)

### **Hong Kong University of Science & Technology**

- Outreach Coordinator, Department of IELM, HKUST
- Curriculum Redesign Task Force, Department of IELM, HKUST
- Local Recruitment and Admissions Committee, School of Engineering, HKUST
- Steering Committee for Sustainable Energy Minor, School of Engineering, HKUST
- Management Committee of Energy Technology, School of Engineering, HKUST
- Supervisor of student teams representing HKUST in Chartered Institute of Logistics and Transport (CILT) Case Competition: Champion (2010), Merit Awards (2011–2012).

- Ad hoc services for department, school and student organization events, e.g.,
  - Supervision of Undergraduate Research Opportunities Program (UROP) projects and Final Year Projects (15 projects involving 56 students from 2010-2014)
  - Graduate and undergraduate admission (local/ international student) interviews and reviews

#### **London Business School**

- External Examiner for MSc Programmes (2019–2022)

#### **University College London**

- External Examiner for Master of Research Programme, School of Management (2018–2022)