

Ruijiu Mao

maoruijiu@u.nus.edu | sites.google.com/view/ruijiu-mao

EDUCATION

National University of Singapore <i>Ph.D in Operations and Analytics, Advisors: Chung-Piaw Teo, Xiaobo Li, Long He</i>	01/2021—Present
Purdue University <i>M.E. in Industrial Engineering</i>	08/2016—05/2020
Fudan University <i>B.S. in Mathematics and Applied Mathematics</i>	09/2011—07/2015

RESEARCH INTERESTS

Methodologies: data analytics, discrete choice analysis, stochastic modeling, optimization

Applications: revenue management, operations-marketing interface, sustainability, supply chain management

PUBLICATION

L. He, N. Ke, **R. Mao**, W. Qi, H. Zhang, From Curtailed Renewable Energy to Green Hydrogen: Infrastructure Planning for Hydrogen Fuel-Cell Vehicles. *Forthcoming in Manufacturing & Service Operations Management, 2024*. [\[Link\]](#)

WORK IN PROGRESS

- R. Mao**, S. Jia, CP Teo, Customized Bundle Pricing for Heterogeneous Products. *Under Major Revision at Production and Operations Management*. [\[Link\]](#)
- R. Mao**, X. Li, Optimizing Size-based Bundle Promotions.
- R. Mao**, L. He, Drone Network Design for Multi-modal Delivery.
- R. Mao**, Y. Feng, L. He, Flexible Operations Strategies for Drone Networks: an Application in Emergency Medical Service.
- R. Mao**, C. Liu, CP Teo, Additional Baggage Pricing without Price Variation.

EARLIER PUBLICATIONS

- C. Feng, **R. Mao**, Interpretable User Behavioral Analysis and Personalized Recommendation with Side Information. *In Proceedings of the 2022 Winter Simulation Conference, Singapore, December 11-14, 2022*.
- R. Mao**, V. Aggarwal, NPSCS: Non-preemptive Stochastic Coflow Scheduling with Time-Indexed LP Relaxation. *IEEE Transactions on Network and Service Management, 2021*.
- V. Aggarwal and **R. Mao**, Preemptive scheduling for approximate computing on heterogeneous machines: Tradeoff between weighted accuracy and makespan. *Information Processing Letters, 2020*.
- B. Du, **R. Mao**, N. Kong, D. Sun, Distributed Data Fusion for On-Scene Biological Signal Sensing with a Multi-UAV System. *IEEE Transactions on Control of Network Systems, 2020*.

- R. Mao, B. Du, D. Sun, N. Kong,** Optimizing a UAV-based Emergency Medical Service Network for Trauma Injury Patients. *In Proceedings of the 15th IEEE International Conference on Automation Science and Engineering, Vancouver, BC, Canada, August 22-26, 2019.*
- R. Mao, V. Aggarwal, and M. Chiang,** Stochastic Co-flow scheduling with Time-Indexed Constraints on Related Machines. *In Proceedings of the 8th International Workshop on Big Data and Cloud Performance (DCPerf'18), Co-located with the IEEE INFOCOM, Honolulu, HI, USA, April 15-19, 2018.*

CONFERENCE PRESENTATIONS

- From Curtailed Renewable Energy to Green Hydrogen: Infrastructure Planning for Hydrogen Fuel-Cell Vehicles. *POMS-HK, January 5-6, 2024.*
- Flexible Operations Strategies for Drone Networks: an Application in Emergency Medical Service. *Analytics for X, December 8-9, 2023.*
- Optimizing Size-Based Bundle Promotions. *INFORMS Annual Meeting, October 15-18, 2023.*
- Additional Luggage Pricing Without Price Variation. *INFORMS Annual Meeting, October 16-19, 2022.*
- Drone Network Design for Multimodal Delivery. *INFORMS Annual Meeting, October 16-19, 2022.*
- Land-air Collaborated Network for Parcel Delivery. *Analytics for X, June 30-July 2, 2021.*
- Contract Design with Information Asymmetry in Emergency Stroke Care Systems. *INFORMS Annual Meeting, October 20-23, 2019.*
- Optimizing a UAV-based Emergency Medical Service Network for Trauma Injury Patients. *15th IEEE International Conference on Automation Science and Engineering, August 22-26, 2019.*
- Optimizing a UAV-based Emergency Medical Service Network for Trauma Injury Patients. *INFORMS Healthcare Conference, July 27-29, 2019.*
- Stochastic Co-flow scheduling with Time-Indexed Constraints on Related Machines. *SIAM CSE Conference, Purdue University, April 15, 2018.*

AWARDS AND HONORS

- | | |
|---|---------|
| Teaching Excellence Award, NUS Business School | 05/2023 |
| Second Place, 2019 IEGSO Research Symposium Poster Session, Purdue IE [Webpage] | 04/2019 |
| Excellent Students Awards, Beijing Municipal Education Commission | 05/2011 |

TEACHING EXPERIENCE

- | | |
|---|-----------------|
| National University of Singapore, Instructor
<i>DAO1704 (Decision Analytics using Spreadsheets)</i> | 01/2023—05/2023 |
| <ul style="list-style-type: none"> Undergraduate Core Module Class Size: 47 Evaluation: 4.6/5.0 (Rank 1 in the Semester) Teaching Excellence Award, NUS Business School | |
| National University of Singapore, Teaching Assistant
<i>IE 4214 (Revenue Management and Pricing Analytics)</i> | 08/2021—Present |
| <ul style="list-style-type: none"> Undergraduate Module, Conducting Tutorials Class Size: 27 (ongoing) | |

IE 3120 (Manufacturing Logistics)

- Undergraduate Module, Conducting Tutorials
- Class Size: 10
- Evaluation: 4.7/5.0

LI5202 (Supply Chain Management Strategies & Case Studies)

DBA5106 (Foundation in Business Analytics)

Purdue University, Teaching Assistant

01/2018—12/2018

CS373 (Data Mining and Machine Learning)

<https://www.cs.purdue.edu/homes/jhonorio/18fall-cs37300.html>

IE533 (Industrial Applications of Statistics)

<https://www.coursehero.com/file/30541364/>

INDUSTRY EXPERIENCE

JD.com, Algorithm Engineer

09/2019—01/2021

JD Cloud & AI, JD-Y (Supply Chain Innovation Division)

- JD Star Camp, Excellent Camper
- JD HACKATHON (semi-finalist): Assortment Planning for “Book Mountains”

JD.com, Algorithm Engineer (Intern)

06/2017—08/2017

JD-Y (Supply Chain Innovation Division)

- Patent (CN 109993619): Extracting Missing Attributes of Products from Descriptive Images

Deloitte Touche Tohmatsu CPA Ltd., Auditor (Intern)

07/2014—08/2014

SERVICES

Reviewer, Annuals of Operations Research and IEEE Transactions on Intelligent Transportation Systems

Session Chair, POMS-HK

01/2024

Session Chair, Winter Simulation Conference

12/2022

Volunteer, Singapore National Library Board

07/2024—Present

President, Purdue Industrial Engineering Graduate Student Organization

05/2019—02/2020

Volunteer, Boiler-up program, Purdue University

09/2016—05/2017

MISCELLANEA

Programming Languages: Python, SQL, Matlab

Programming Skills: Image Recognition, Web Crawling, Natural Language Processing, Data Visualization

Hobbies: Running, Traveling, Attending Concerts, Playing the Violin