Meng Qi

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Education

University of California, Berkeley
Ph.D. Industrial Engineering & Operations Research — 2022 (expected)
- Advisor: Zuo-Jun Max Shen

Minor: Statistics & Machine Learning

Tsinghua University, Beijing
B.S. Mathematics and Physics — 2016

Research Interests

Data-driven decision making with uncertainty in the interface of machine learning and operations management.
Methodology: optimization (convex and robust), machine learning (statistical, online, deep, and reinforcement).
Topics: supply chain management and retail operations.

Research Papers

Distributionally Robust Conditional Quantile Prediction with fixed design.
Management Science, 2021
Honorable mention, POMS-HK best student paper competition, 2020.
(Joint with Ying Cao, Zuo-Jun Max Shen)

A Practical End-to-End Inventory Management Model with Deep Learning.
Forthcoming at **Management Science**.
This method is implemented in production at JD.com since 2020.
The code and sanitized data set is under preparation for public sharing.
(Joint with Yuanyuan Shi, Yongzhi Qi, Chenxin Ma, Rong Yuan, Di Wu, Zuo-Jun Max Shen)

Urban Courier: Operational Innovation and Data-driven Coverage-and-Pricing.
Major revision at **Operations Research**.
(Joint with Mengxin Wang, Junyu Cao, Zuo-Jun Max Shen)

Data-Driven Research in Retail Operations—A review.
Naval Research Logistics (NRL) 67, no. 8 (2020): 595-616..
(Joint with Ho-Yin Mak, Zuo-Jun Max Shen)

Integrated Conditional Estimation-Optimization.
To be submitted at **Management Science**.
(Joint with Paul Grigas, Zuo-Jun Max Shen)

Smart Feasibility Pump: Reinforcement Learning for (Mixed) Integer Programming.
ICML 2021 RL for Real Life Workshop, spotlight session presentation, submitted to **IEEE Conference on Robotics and Automation** 2022.
The code is under preparation for public sharing.
(Joint with Mengxin Wang, Zuo-Jun Max Shen)

Learning Operational Decisions with Intertemporal Dependence and Moderate Non-stationarities.
Submitted to **Production and Operations Management**.
(Joint with Zeyu Zheng, Zuo-Jun Max Shen)

End-to-End Deep Learning for Inventory Management with Fixed Ordering Cost and its Theoretical Analysis.
To be submitted to **Manufacturing Service Operations Management.**
(Joint with Mo Liu, Zuo-Jun Max Shen)

Work in Progress

Distributionally robust MDP with an online updated ambiguity set.
(Joint with Shuo Sun, Zuo-Jun Max Shen)

Data-Driven Nonparametric Product Design.
(Joint with Mengxin Wang, Zuo-Jun Max Shen)

Learning Newsvendor Problem in a Growing Environment.
(Joint with Shunan Jiang, Zeyu Zheng, Zuo-Jun Max Shen)

Teaching Experience

Instructor, UC Berkeley
- IEOR 253/CEE 258, Supply Chain and Logistics Management Spring 2021

Teaching evaluation: 4.75/5.00 (IEOR 253, department average 4.22), 5.00/5.00 (CEE 258)

Co-Instructor, UC Berkeley
- IEOR 253/CEE 258, Supply Chain and Logistics Management Spring 2020

Teaching Assistant, UC Berkeley
- IEOR 142 Introduction to Machine Learning and Data Analytics, Fall 2017& 2018
- IEOR 242 Applications in Data Analysis Spring 2018

Presentations

Integrated Conditional Estimation-Optimization
- NFORMS Annual Meeting, 2021
- NFORMS Annual Meeting, 2020

Distributionally Robust Conditional Quantile Prediction with Fixed Design
- Berkeley-Columbia Meeting in Engineering and Statistic, 2020
- POMS-HK best student paper competition, 2020
- INFORMS Annual Meeting, 2020
- INFORMS Annual Meeting, 2019
- POMS Annual Meeting, 2019

A Practical End-to-End Inventory Management Model with Deep Learning
- MIT MIMO Student Research Forum
- INFORMS Annual Meeting, 2019

Work Experience

Research Scientist Intern, **Amazon** New York, Summer 2021
- Developed reinforcement learning methods for dual-sourcing, which could decrease the buying cost by up to 20% by simulation.
- Presented at Amazon Reinforcement Learning Research Summit.

Research Scientist Intern, **JD.com** Mountain View, Summer 2018
- Developed a practical end-to-end inventory management model empowered by deep learning. This model has been implemented in JD.com's logistics system since 2020.
- This model is currently responsible for the replenishment decisions for 7000+ SKUs and the number is expanding.

Services

Session Chair, INFORMS Annual Meeting, 2021
- Robust and stochastic decision-making under uncertainty.

Session Chair, INFORMS Annual Meeting, 2020
- On prediction and optimization in data-driven decision-making systems.

Reviewer, *Management Science*, *Manufacturing & Service Operations Management*, *Production and Operations Management*
Organizer, Student Summer Seminar Series, IEOR Department, UC Berkeley, Summer 2019.

Honors and Awards

- Marshall-Oliver-Rosenberger Fellowship, IEOR Department 2020
- Graduate Remote Instruction Innovation Fellows, UC Berkeley 2020
- Honorable Mention, POMS-HK Best Student Paper Competition 2020
- First Year Department Fellowship, IEOR Department 2016
- Scholarship of Excellent Academic Performance, Tsinghua University 2014
- First Prize, Chinese Physics Olympiad 2011

References

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