Mo LIU

PhD Candidate | Department of Industrial Engineering and Operations Research
1117 Etcheverry Hall, University of California, Berkeley, CA
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EDUCATION

University of California, Berkeley Aug 2019 - Present
PhD Candidate in Industrial Engineering and Operations Research, GPA: 3.976/4.00
Master of Science in Industrial Engineering and Operations Research July 2020
Advisor: Prof. Zuo-Jun Max Shen

Tsinghua University Aug 2015 - Jul 2019
Bachelor of Engineering in Industrial Engineering with Honor, Rank: Top 2%

RESEARCH INTERESTS

- Machine learning (statistical learning, active learning)
- Data-driven decision making (decision-focused learning)
- Revenue management, pricing, supply chain management

RESEARCH PAPERS

[1]. **Mo Liu**, Junyu Cao, Zuo-Jun Max Shen, "Value of One Data Point: Active Label Acquisition in Assortment Optimization," to be resubmitted to ***Management Science***, 2023

[2]. **Mo Liu**, Paul Grigas, Heyuan Liu, Zuo-Jun Shen, "Active Learning in the Predict-then-Optimize Framework: A Margin-Based Approach," to be resubmitted to ***Management Science***, 2023
Best Student Paper Nominee at INFORMS Workshop on Data Science 2023
Second Prize at CMU YinzOR Poster Competition 2023

[3]. **Mo Liu**, Junyu Cao, Zuo-Jun Max Shen, "Learning from Click Transition Data: Empowering Greedy Pricing Policy under Dynamic Product Availability," to be submitted to ***Management Science***, 2023
2023 INFORMS Service Science Student Competition Finalist
Fan Favorite Flash Talk at CMU YinzOR 2023

[4]. **Mo Liu**, Meng Qi, Zuo-Jun Max Shen, "End-to-End Deep Learning for Automatic Inventory Management with Fixed Ordering Cost," *working paper*, 2022

[5]. **Mo Liu**, Paul Grigas, Zuo-Jun Max Shen, "Importance-Weighted Active Learning Based on Prediction Uncertainty: Applications in Contextual Stochastic Linear Optimization," *working paper,* 2023

[6]. **Mo Liu**, Paul Grigas, Zuo-Jun Max Shen, "Uniformly calibrated prediction for prescriptive analytics," *work in progress*, 2023

INDUSTRY RESEARCH EXPERIENCE

IBM, AI for transportation, Yorktown Heights, NY
Research Intern, Manager: Markus Ettl May 2022 - Aug 2022

- Designed pricing strategies for the logistic network using a time-series demand model

Amazon, Department of Supply Chain Optimization Technology, Seattle, WA, (Virtual)

Research Scientist Intern, Manager: Jingchen Wu June 2020 - Aug 2020

- Developed the pricing strategy for used items with different conditions at Amazon Warehouse using MNL model

PATENT IN APPLICATION

Machine learning and optimization with partially observable time series data 2022

Zachary Xue, **Mo Liu**, Markus Ettl, Shivaram Subramanian

TEACHING EXPERIENCE

Graduate Student Instructor at UC Berkeley

Responsibilities: Lead one-hour discussion weekly, hold office hours, design exams and homework

IEOR 250 Introduction to Production Planning and Logistics Models (PhD and Masters course) Fall 2020

IEOR 142 Introduction to Machine Learning and Data Analytics (Undergraduate course) Spring 2021

IEOR 240 Optimization Analytics (M.Analytics and M.Eng. course) Fall 2022

IEOR 242 Machine Learning and Data Analytics (M.Analytics and M.Eng. course) Spring 2023

IEOR 240 Optimization Analytics (M.Analytics and M.Eng. course) Fall 2023

IEOR 142 Introduction to Machine Learning and Data Analytics (Undergraduate course) Spring 2024

TALKS

Personalized Incentive for Active Label Acquisition in the Assortment Optimization

- INFORMS Annual Meeting, Phoenix Oct 2023
- Purdue Operations Conference, West Lafayette Sept 2023
- MSOM Annual Conference, Montreal June 2023

Pricing under the Generalized Markov Chain Choice Model: Learning through Large-scale Click Behaviors

- INFORMS Service Science IBM Student Competition, Phoenix Oct 2023
- CMU YinzOR Student Conference, Pittsburgh Aug 2023
- Berkeley IEOR PhD Student Orientation Flash Talk Aug 2023
- INFORMS Annual Meeting, Indianapolis Oct 2022

Active Learning in the Predict-then-Optimize Framework: A Margin-Based Approach

- INFORMS Workshop on Data Science, Phoenix Oct 2023
- International Conference Stochastic Programming, Davis July 2023
- IBM Intern Research Talk, Yorktown Heights June 2022

End-to-End Deep Learning for the Inventory Management with Fixed Ordering Cost

- INFORMS Annual Meeting, Online Oct 2020

AWARDS

INFORMS Workshop on Data Science Student Scholarship 2023

INFORMS Service Science Student Competition Finalist 2023

Duryea Fellowship, IEOR Department, UC Berkeley 2021

First Year Fellowship, IEOR Department, UC Berkeley 2019
Outstanding Graduate in Beijing (top 1%) 2019
Excellent Graduate in Tsinghua University (top 5%) 2019
Outstanding Undergraduate Thesis Award in Tsinghua University 2019
National Scholarship in China (top 1%) 2018
Principal Jiang Nanxiang Scholarship (top 1%) 2017

ACTIVITIES AND SERVICE

- Reviewer for *Production and Operations Management*, *IEEE Transactions on Information Theory, IISE Transactions*
- Session chair, INFORMS Annual Meeting 2023
- Organizer of research group meeting for Zuo-Jun Max Shen 2020-2023
- Student mentor for PhD students, IEOR department at UC Berkeley 2023

SKILLS

Programming Languages & Software

- Python, R, JAVA, HTML, Cplex, Gurobi, MySQL, Latex

REFERENCES

- Prof. Zuo-Jun Max Shen
  Professor Emeritus at Industrial Engineering and Operations Research
  University of California, Berkeley
  Vice-President and Pro-Vice-Chancellor at Hong Kong University
  Email: maxshen@berkeley.edu

- Prof. Paul Grigas
  Assistant Professor
  Industrial Engineering and Operations Research
  University of California, Berkeley
  Email: pgrigas@berkeley.edu

- Prof. Junyu Cao
  Assistant Professor
  Department of Information, Risk, and Operations Management (Decision Science)
  McCombs School of Business, University of Texas at Austin
  Email: junyu.cao@mccombs.utexas.edu