

# Mo LIU

PhD Candidate | Department of Industrial Engineering and Operations Research

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## EDUCATION

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<b>University of California, Berkeley</b>	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	
<b>Tsinghua University</b>	Aug 2015 - Jul 2019
Bachelor of Engineering in Industrial Engineering with Honor, Rank: Top 2%	

## RESEARCH INTERESTS

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

## RESEARCH PAPERS

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- [1]. **Mo Liu**, Junyu Cao, Zuo-Jun Max Shen, “Active Label Acquisition with Personalized Incentives in Assortment Optimization,” under review at *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,” under review at *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, “Pricing under the Generalized Markov Chain Choice Model: Learning through Large-scale Click Behaviors,” under review at *Operations Research*, 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,” under review at *Production and Operations Management*, 2022
- [5]. **Mo Liu**, Paul Grigas, Zuo-Jun Max Shen, “Importance-Weighted Active Learning for Contextual Stochastic 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

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**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**

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Machine learning and optimization with partially observable time series data

2022

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

## **TEACHING EXPERIENCE**

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*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

## **TALKS**

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*Personalized Incentive for Active Label Acquisition in the Assortment Optimization*

- INFORMS Annual Meeting, Phoenix (scheduled) 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 (scheduled) Oct 2023
- 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 (scheduled) 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**

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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

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- Reviewer for *Production and Operations Management*, *IEEE Transactions on Information Theory*
- 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

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### Programming Languages & Software

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

## REFERENCES

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- 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](mailto:maxshen@berkeley.edu)
- Prof. Paul Grigas  
Assistant Professor  
Industrial Engineering and Operations Research  
University of California, Berkeley  
Email: [pgrigas@berkeley.edu](mailto: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  
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