Jiayu Kamessi Zhao

Operations Research Center (ORC)
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EDUCATION

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research 2020 - 2025 (Expected)
GPA: 5.0/5.0 Advisor: Daniel Freund

Columbia University, New York, NY 2016 - 2020
B.S. in Operations Research: Financial Engineering
Summa Cum Laude

RESEARCH INTERESTS

My research focuses on platform operations and market design problems within gig economies. I am particularly interested in (i) optimizing the dynamic operational decisions in online marketplaces, and (ii) developing incentive-compatible methods to introduce technological innovations to gig economy platforms. In tackling these challenges, my works lie at the intersection of game theory, stochastic decision-making, and online algorithms.

PUBLICATIONS AND PREPRINTS

"Two-sided Flexibility in Platforms," with D. Freund and S. Martin.
Submitted, 2024. Preliminary version available at ARXIV: `https://doi.org/10.48550/arXiv.2404.04709`.

- Accepted for presentation at 2024 INFORMS Manufacturing and Service Operations Management (MSOM) Conference
- Accepted for presentation at 2024 INFORMS Revenue Management and Pricing (RMP) Conference
- Accepted for presentation at 2024 Marketplace Innovation Workshop

"On the Supply of Autonomous Vehicles in Platforms," with D. Freund and I. Lobel.
Major Revision at **Manufacturing & Service Operations Management**. Preliminary version available at SSRN: `https://ssrn.com/abstract=4178508`.

- An earlier version of this paper was accepted at the **Twenty-Fifth ACM Conference on Economics and Computation (EC'24)**, 2024.
- Accepted for presentation at **2024 INFORMS MSOM Supply Chain Management SIG Conference**
- Accepted for presentation at 2023 INFORMS RMP Conference
- Accepted for presentation at 2023 Marketplace Innovation Workshop

"End-of-Horizon Load Balancing Problems: Algorithms and Insights," with D. Freund and C. Hssaine. Preliminary version available at arXiv: https://arxiv.org/abs/2306.01968.

"Overbooking with Bounded Loss," with D. Freund. 2022. **Mathematics of Operations Research** 48(3): 1344-1363.

- An earlier version of this paper was accepted at the **Twenty-Second ACM Conference on Economics and Computation (EC'21)**, 2021.
- Accepted for presentation at 2021 Marketplace Innovation Workshop

SELECTED TALKS

"On the Supply of Autonomous Vehicles in Platforms"

- 2022/2023 INFORMS Annual Meeting
- 2023 Cornell Young Researchers Workshop

- 2023 MSOM Conference
- 2023 Marketplace Innovation Workshop

"Two-sided Flexibility in Platforms."
- 2024 MIT LIDS Student Conference
- Xi'an Jiaotong University, Jan 2024
- Shanghai University of Finance and Economics, Dec 2023

"Overbooking with Bounded Loss."
- 22^{th} ACM Conference on Economics and Computation (EC'21)
- 2021 INFORMS Annual Meeting
- ORC Student Seminar, Apr 2022

WORK EXPERIENCE

Uber Technologies, Inc., San Francisco, CA — Summer 2023 & 2024
Applied Scientist PhD Intern
Conducted convex optimization for UberEats' real-time pricing algorithm; devised solutions to enhance the chained supply model used for dampening surge demand.

AllianceBernstein L.P., New York, NY — Summer 2019
Quantitative Research Intern
Formulated a market timing strategy to adopt stock-bond relative return before month end as a trading signal by verifying the existence of month-end re-balancing flows.

Columbia Business School, New York, NY — Summer 2018
Summer Research Intern
Validated the tendency for active funds to trade against passive flows by applying econometric and statistical tools to historical data on mutual fund portfolio disclosures.

TEACHING EXPERIENCE

Massachusetts Institute of Technology, Cambridge, MA
Teaching Assistant for *15.761 Intro to Operations Management* — Spring 2024
Teaching Assistant for *15.761 Intro to Operations Management* — Spring 2023
Teaching Assistant for *15.761 Intro to Operations Management* — Spring 2022
Teaching Assistant for *15.S25 Experience in Operations Research* — Summer 2022

Columbia University, New York, NY
Teaching Assistant for *Math 2030 Ordinary Differential Equations* — Fall 2018
Teaching Assistant for *IEOR E3658 Probability for Engineers* — Fall 2018

PROFESSIONAL SERVICES

MIT ORC Seminar Series student coordinator — Fall 2023
MIT Operations Management Seminar student co-organizer — 2021 - 2023
Visiting Graduate Student, Data-Driven Decision Processes Program, Simons Institute at UC Berkeley — Fall 2022

HONORS AND AWARDS

The Sebastian B. Littauer Award, Columbia University — 2020
Tau Beta Pi Honor Society, Columbia University (NY Chapter) — 2018 - 2020
The Dean's List, Columbia University, — 2016 - 2020
C.P. Davis Scholar, Columbia University — 2016