

Jackie Baek

CONTACT	baek@stern.nyu.edu	https://jwbaek.github.io
EMPLOYMENT	New York University, Stern School of Business Assistant Professor, Technology, Operations & Statistics	2023 -
	Simons Institute for the Theory of Computing, UC Berkeley Research Fellow in the program <i>Data-Driven Decision Processes</i>	Fall 2022
EDUCATION	Massachusetts Institute of Technology Ph.D. in Operations Research Thesis: Decision-Making Under Uncertainty: From Theory to Practice Advisor: Vivek F. Farias	2016 - 2022
	University of Waterloo Bachelor of Mathematics Joint Honours Computer Science & Combinatorics and Optimization	2011 - 2016
JOURNAL PUBLICATIONS	Policy Optimization for Personalized Interventions in Behavioral Health Jackie Baek, Justin J. Boutilier, Vivek F. Farias, Jónas Oddur Jónasson, Erez Yoeli <i>Manufacturing and Service Operations Management</i> , 2025 ★ Winner, <i>Pierskalla Best Paper Award 2024</i>	
	The Limits to Learning a Diffusion Model Jackie Baek, Vivek F. Farias, Andreea Georgescu, Retsef Levi, Tianyi Peng, Deeksha Sinha, Joshua Wilde, Andrew Zheng <i>Management Science</i> , 2025 Preliminary version: <i>22nd ACM conference on Economics and Computation</i> , 2021	
	Fair Exploration via Axiomatic Bargaining Jackie Baek, Vivek F. Farias <i>Management Science</i> , 2024 Preliminary version: <i>NeurIPS 2021 (Spotlight, top 3% of submissions)</i> ★ Second Place, <i>MSOM Student Paper Competition 2022</i> ★ Finalist, <i>George Nicholson Student Paper Competition 2021</i> ★ Finalist, <i>RMP Jeff McGill Student Paper Award 2021</i> ★ Honorable Mention, <i>MIT ORC Best Student Paper Competition 2021</i> ★ Oral presentation, <i>1st ACM Conference on Equity & Access in Algorithms, Mechanisms, & Optimization</i> , 2021	
	Bifurcating Constraints to Improve Approximation Ratios for Network Revenue Management with Reusable Resources Jackie Baek, Will Ma <i>Operations Research</i> , 2022 Preliminary version: <i>12th International Symposium on Algorithmic Game Theory</i> , 2019	
	Evaluation of individual and ensemble probabilistic forecasts of COVID-19 mortality in the United States COVID-19 Forecast Hub (298 authors) <i>Proceedings of the National Academy of Sciences</i> , 2022	

- This paper resulted from contributing COVID-19 forecasts (from the paper “The Limits to Learning a Diffusion Model”) to the COVID-19 Forecast Hub.

A Game-Theoretic Analysis of Reallocation Mechanisms for Airport Landing Slots

Jackie Baek, Hamsa Balakrishnan

IEEE Transactions on Intelligent Transportation Systems, 2020

CONFERENCE
PUBLICATIONS
(NO JOURNAL
VERSION)

When Collaborative Filtering is not Collaborative: Unfairness of PCA for Recommendations

David Liu, Jackie Baek, Tina Eliassi-Rad

ACM Conference on Fairness, Accountability, and Transparency (FAccT) 2025

TS-UCB: Improving on Thompson Sampling With Little to No Additional Computation

Jackie Baek, Vivek F. Farias

International Conference on Artificial Intelligence and Statistics (AISTATS) 2023

WORKING PAPERS

Social Learning with Bounded Rationality: Negative Reviews Persist under Newest First

Jackie Baek, Atanas Dinev, Thodoris Lykouris

Major Revision, *Operations Research*

Preliminary version: *25th ACM conference on Economics and Computation, 2024*

The Feedback Loop of Statistical Discrimination

Jackie Baek, Ali Makhdoumi

Hiring under Congestion and Algorithmic Monoculture: Value of Strategic Behavior

Jackie Baek, Hamsa Bastani, Shihan Chen

Leveraging Reusability: Improved Competitive Ratio of Greedy for Reusable Resources

Jackie Baek, Shixin Wang

TEACHING

NYU Stern

Instructor, Operations Management (Undergraduate Core)

2024, 2025

Guest Lecture for PhD class

2022, 2024

Columbia University

Guest Lecture for PhD class (IEOR 8100)

2024

Wharton School, University of Pennsylvania

Guest Lecture for PhD class

2022

MIT Sloan

Teaching Assistant, Operations Management (MBA Sloan Fellows)

2020

Teaching Assistant, The Analytics Edge (MBA)

2018

Instructor (one lecture), Computing in Optimization and Statistics

2017, 2018

INVITED TALKS

2025: BIRS Workshop on Dynamic Allocation and Matching, OM in the Wild Workshop, CMU Tepper

2024: BIRS Workshop on Combinatorial Optimization for Online Platforms, NYU Langone HiBRID Cafe, TTIC Workshop on Data-Driven Decision Processes, NYU Theory CS Seminar

2023: CUHK Business School, IMSI Workshop on Analytics for Improved Healthcare, NYU Digital Health Research Workgroup, UMass Amherst CS Theory

2022: Northwestern Kellogg, Columbia IEOR, USC Marshall, Johns Hopkins Carey, NYU Stern, Stanford GSB, Duke Fuqua, Yale SOM, Michigan Ross, Chicago Booth, UToronto Rotman Young Scholar Seminar, Caltech RSRG, LinkedIn Responsible AI, Workshop on Information and Learning

2021: UPenn Wharton, UBC Sauder, UNC Kenan-Flagler, Cornell ORIE, MIT OM Seminar, MIT Data Science Lab Seminar, Cornell Young Researchers Workshop

SERVICE

Reviewer for Journals: *Management Science*, *Operations Research*, *Manufacturing & Service Operations Management*, *Operations Research Letters*, *Mathematics of Operations Research*, *European Journal of Operational Research*, *Journal of Machine Learning Research*, *IEEE Control Systems Letters*, *IEEE Transactions on Intelligent Transportation Systems*, *INFORMS Journal on Computing*, *Health Care Management Science*

Program Committee/Reviewer for Conferences: *EC 2023-2025*, *FAccT 2022-2025*, *EAAMO 2023-2025*, *WINE 2022*, *ALT 2023*, *The Web Conference 2023*, *AISTATS 2023*, *NeurIPS 2023*, *ICLR 2024*, *COLT 2024*, *MSOM SIG 2024*, *RMP Student Paper Competition 2024*

Co-organizer, TTIC Summer Workshop on *Data-Driven Decision Processes: From Theory to Practice* 2024

Co-organizer, NYC Operations Day 2024, 2025

Organizer, Stern OM Seminar Series 2023, 2024

Member, Stern OM Recruiting Committee 2023, 2024

Member, Stern OM Graduate Admissions Committee 2024, 2025

HONORS AND AWARDS

Winner, Pierskalla Best Paper Award 2024

Management Science Meritorious Service Award 2024

Management Science Distinguished Service Award 2023

Second Place, MSOM Student Paper Competition 2022

Finalist, George Nicholson Student Paper Competition 2021

Finalist, RMP Jeff McGill Student Paper Award 2021

Honorable Mention, MIT ORC Best Student Paper Competition 2021

Finalist, Post-Pandemic Supply Chain and Healthcare Management Best Paper Competition 2021

Runner-up, MIT LIDS Student Conference Best Presentation 2018

NSERC Undergraduate Student Research Award 2015

Mathematics National Scholarship, University of Waterloo 2011 - 2016

WORK EXPERIENCE

GRAIL Palo Alto, CA
Machine Learning Engineer Intern Summer 2018

Investigated genomic features on its ability to improve detecting early-stage cancer

Snap Venice, CA
Software Engineer Intern Fall 2014, Summer 2016

Improved app startup performance by implementing incremental updates

Bloomberg London, UK
Software Engineer Intern Fall 2015
Optimized a financial dashboard using a dependency graph to minimize redundant function calls

Dropbox San Francisco, CA
Software Engineer Intern Fall 2013, Spring 2014
Optimized sync by implementing delta compression using finite-state machines

LogicBlox Atlanta, GA
Software Engineer Intern Spring 2013

Axentra Ottawa, Canada
Software Engineer Intern Summer 2012

VOLUNTEER
EXPERIENCE

COVID-19 Alliance Senior Support Team of New Hampshire
Data Scientist 2020 - 2021
Built and deployed an automated communication system (SMS and email) with all senior residential facilities in NH, used daily from April 2020 to June 2021

Sidney-Pacific Graduate Student Residence (MIT)
Brunch Chair 2016 - 2018
Led a group of ~50 volunteers every month to cook brunch for 300+ residents