

# Jackie Baek

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CONTACT	baek@stern.nyu.edu	<a href="https://jwbaek.github.io">https://jwbaek.github.io</a>
EMPLOYMENT	<b>New York University, Stern School of Business</b> Assistant Professor, Technology, Operations & Statistics	2023 -
	<b>Simons Institute for the Theory of Computing, UC Berkeley</b> Research Fellow in the program <i>Data-Driven Decision Processes</i>	Fall 2022
EDUCATION	<b>Massachusetts Institute of Technology</b> Ph.D. in Operations Research Thesis: Decision-Making Under Uncertainty: From Theory to Practice Advisor: Vivek F. Farias	2016 - 2022
	<b>University of Waterloo</b> Bachelor of Mathematics Joint Honours Computer Science & Combinatorics and Optimization	2011 - 2016
PUBLICATIONS	<b>The Limits to Learning a Diffusion Model</b> with Vivek F. Farias, Andreea Georgescu, Retsef Levi, Tianyi Peng, Deeksha Sinha, Joshua Wilde, Andrew Zheng <i>Management Science (Accepted)</i> Preliminary version: <i>22nd ACM conference on Economics and Computation, 2021</i>	
	<b>Fair Exploration via Axiomatic Bargaining</b> with Vivek F. Farias <i>Management Science (Accepted)</i> Preliminary version: <i>NeurIPS 2021 (Spotlight, top 3% of submissions)</i> <ul style="list-style-type: none"><li>* Second Place, <i>MSOM Student Paper Competition 2022</i></li><li>* Finalist, <i>George Nicholson Student Paper Competition 2021</i></li><li>* Finalist, <i>RMP Jeff McGill Student Paper Award 2021</i></li><li>* Honorable Mention, <i>MIT ORC Best Student Paper Competition 2021</i></li><li>* Oral presentation, <i>1st ACM Conference on Equity &amp; Access in Algorithms, Mechanisms, &amp; Optimization, 2021</i></li></ul>	
	<b>Bifurcating Constraints to Improve Approximation Ratios for Network Revenue Management with Reusable Resources</b> with Will Ma <i>Operations Research, 2022</i> Preliminary version: <i>12th International Symposium on Algorithmic Game Theory, 2019</i>	
	<b>TS-UCB: Improving on Thompson Sampling With Little to No Additional Computation</b> with Vivek F. Farias <i>AISTATS 2023</i>	
	<b>Evaluation of individual and ensemble probabilistic forecasts of COVID-19 mortality in the United States</b> with COVID-19 Forecast Hub <i>Proceedings of the National Academy of Sciences, 2022</i>	

- 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**

with Hamsa Balakrishnan

*IEEE Transactions on Intelligent Transportation Systems, 2020*

WORKING PAPERS **Policy Optimization for Personalized Interventions in Behavioral Health**

with Justin J. Boutilier, Vivek F. Farias, Jónas Oddur Jónasson, Erez Yoeli

Major revision, *Manufacturing and Service Operations Management*

**Leveraging Reusability: Improved Competitive Ratio of Greedy for Reusable Resources**

with Shixin Wang

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

with David Liu, Tina Eliassi-Rad

**The Feedback Loop of Statistical Discrimination**

with Ali Makhdoumi

TEACHING **Operations Management (15.778)**

EXPERIENCE *Teaching Assistant* for Sloan Fellows MBA Students

Summer 2020

**The Analytics Edge (15.071)**

*Teaching Assistant* for MBA Students

Spring 2018

**Computing in Optimization and Statistics (15.S60)**

*Instructor* for a 3-hour lecture on computing tools for PhD students

2017, 2018

INVITED TALKS **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

**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*

Program Committee/Reviewer for Conferences: *EC 2023/2024, FAccT 2022/2023/2024, WINE 2022, ALT 2023, The Web Conference 2023, AISTATS 2023, EAAMO 2023, NeurIPS 2023, ICLR 2024, COLT 2024*

Session Chair, INFORMS Annual Meeting

2021-2024

Student Coordinator, MIT ORC Seminar Series

Fall 2020

Student Coordinator, MIT OM Seminar Series

Spring 2020

HONORS AND AWARDS	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
	Professional Education Foundation Scholarship, University of Waterloo	2014
	Mathematics National Scholarship, University of Waterloo	2011 - 2016
WORK EXPERIENCE	<b>GRAIL</b>	Palo Alto, CA
	<i>Machine Learning Engineer Intern</i>	Summer 2018
	Investigated genomic features on its ability to improve detecting early-stage cancer	
	<b>Snap</b>	Venice, CA
	<i>Software Engineer Intern</i>	Fall 2014, Summer 2016
	Improved app startup performance by implementing incremental updates	
VOLUNTEER EXPERIENCE	<b>Bloomberg</b>	London, UK
	<i>Software Engineer Intern</i>	Fall 2015
	Optimized a financial dashboard using a dependency graph to minimize redundant function calls	
	<b>Dropbox</b>	San Francisco, CA
<i>Software Engineer Intern</i>	Fall 2013, Spring 2014	
Optimized sync by implementing delta compression using finite-state machines		
OTHER	<b>LogicBlox</b>	Atlanta, GA
	<i>Software Engineer Intern</i>	Spring 2013
	<b>Axentra</b>	Ottawa, Canada
<i>Software Engineer Intern</i>	Summer 2012	
VOLUNTEER EXPERIENCE	<b>COVID-19 Alliance Senior Support Team of New Hampshire</b>	
	<i>Data Scientist</i>	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		
VOLUNTEER EXPERIENCE	<b>Sidney-Pacific Graduate Student Residence (MIT)</b>	
	<i>Brunch Chair</i>	2016 - 2018
Led a group of ~50 volunteers every month to cook brunch for 300+ residents		
OTHER	Citizenship: Canadian	
	Hobbies: squash, running, snowboarding, basketball	