

## Jackie Baek

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CONTACT INFORMATION	baek@stern.nyu.edu (415) 996-4275	<a href="http://www.mit.edu/~baek/">http://www.mit.edu/~baek/</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, GPA: 5.0/5.0 Thesis: Decision-Making Under Uncertainty: From Theory to Practice Advisor: Vivek Farias	2016 - 2022
	<b>University of Waterloo</b> Bachelor of Mathematics, GPA: 93.0/100.0 Joint Honours Computer Science & Combinatorics and Optimization	2011 - 2016
INTERESTS	Online decision-making, algorithmic fairness, machine learning, data-driven analytics	
PAPERS	<ol style="list-style-type: none"><li><b>1. Fair Exploration via Axiomatic Bargaining</b> with Vivek Farias 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></li><li><b>2. The Limits to Learning a Diffusion Model</b> with Vivek Farias, Andreea Georgescu, Retsef Levi, Tianyi Peng, Deeksha Sinha, Joshua Wilde, Andrew Zheng Preliminary version: <i>22nd ACM conference on Economics and Computation, 2021</i><ul style="list-style-type: none"><li>★ Finalist, <i>Post-Pandemic Supply Chain and Healthcare Management Best Paper Competition 2021</i></li></ul></li><li><b>3. Evaluation of individual and ensemble probabilistic forecasts of COVID-19 mortality in the US</b> with COVID-19 Forecast Hub <i>Proceedings of the National Academy of Sciences, 2022</i><ul style="list-style-type: none"><li>- This paper resulted from contributing COVID-19 forecasts (from the paper “The Limits to Learning a Diffusion Model”) to the COVID-19 Forecast Hub.</li></ul></li><li><b>4. TS-UCB: Improving on Thompson Sampling With Little to No Additional Computation</b> with Vivek Farias Submitted</li><li><b>5. Bifurcating Constraints to Improve Approximation Ratios for Network Revenue Management with Reusable Resources</b></li></ol>	

with Will Ma  
*Operations Research*, 2022 (Articles in Advance)  
 Preliminary version: *12th International Symposium on Algorithmic Game Theory*, 2019

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

with Hamsa Balakrishnan  
*IEEE Transactions on Intelligent Transportation Systems*, 2020

TEACHING EXPERIENCE	<b>Operations Management (15.778)</b> <i>Teaching Assistant</i> for Sloan Fellows MBA Students	Summer 2020
	<b>The Analytics Edge (15.071)</b> <i>Teaching Assistant</i> for MBA Students	Spring 2018
	<b>Computing in Optimization and Statistics (15.S60)</b> <i>Instructor</i> for a 3-hour lecture on computing tools for PhD students	2017, 2018
WORK EXPERIENCE	<b>GRAIL</b> <i>Machine Learning Engineer Intern</i> Investigated genomic features on its ability to improve detecting early-stage cancer	Palo Alto, CA Summer 2018
	<b>Snap</b> <i>Software Engineer Intern</i> Improved app startup performance by implementing incremental updates	Venice, CA Fall 2014, Summer 2016
	<b>Bloomberg</b> <i>Software Engineer Intern</i> Optimized a financial dashboard using a dependency graph to minimize redundant function calls	London, UK Fall 2015
	<b>Dropbox</b> <i>Software Engineer Intern</i> Optimized sync by implementing delta compression using finite-state machines	San Francisco, CA Fall 2013, Spring 2014
	<b>LogicBlox</b> <i>Software Engineer Intern</i>	Atlanta, GA Spring 2013
	<b>Axentra</b> <i>Software Engineer Intern</i>	Ottawa, Canada Summer 2012
	Reviewer for Journals: <i>Operations Research</i> , <i>Management Science</i> , <i>Manufacturing &amp; Service Operations Management</i> , <i>Operations Research Letters</i> , <i>European Journal of Operational Research</i> , <i>Journal of Machine Learning Research</i> , <i>IEEE Control Systems Letters</i> , <i>IEEE Transactions on Intelligent Transportation Systems</i> , <i>INFORMS Journal on Computing</i> Program Committee/Reviewer for Conferences: <i>FACCT 2022/2023</i> , <i>WINE 2022</i> , <i>ALT 2023</i> , <i>The Web Conference 2023</i> , <i>AISTATS 2023</i> Session Chair, INFORMS Annual Meeting Student Coordinator, MIT ORC Seminar Series Student Coordinator, MIT OM Seminar Series	2021, 2022 Fall 2020 Spring 2020
SERVICE		

TALKS	<i>Fair Exploration via Axiomatic Bargaining</i>	
	Northwestern Kellogg, Columbia IEOR, USC Marshall, Johns Hopkins Carey, 2022	
	NYU Stern, Stanford GSB, Duke Fuqua, Yale SOM, Michigan Ross, Chicago Booth, Rotman Young Scholar Seminar, Caltech RSRG	
	UPenn Wharton, UBC Sauder, UNC Kenan-Flagler, Cornell ORIE, 2021	
	MIT OM Seminar, Data Science Lab Seminar (MIT), Cornell Young Researchers Workshop, Marketplace Innovation Workshop, MSOM Conference, RMP Conference	
	<i>The Limits to Learning a Diffusion Model</i>	
	Healthcare Operations SIG Meeting	2021
	ACM conference on Economics and Computation	2021
	<i>TS-UCB: Improving on Thompson Sampling With Little to No Additional Computation</i>	
	INFORMS Annual Meeting	2020
	<i>Bifurcating Constraints to Improve Approximation Ratios for (Reusable) Network Revenue Management</i>	
	INFORMS Annual Meeting	2019
	Revenue Management and Pricing	2019
	POMS Annual Conference	2019
	<i>Mechanism Design for Airport Landing Slot Exchange</i>	
	LIDS Student Conference	2018
	★ Runner-up, <i>Best Presentation Award</i>	
	INFORMS Annual Meeting	2018
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
VOLUNTEER EXPERIENCE	Mathematics National Scholarship, University of Waterloo	2011 - 2016
	<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	
	<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	