Akshit Kumar

ak4599@columbia.edu
akshitkumar.github.io

Education

Columbia University, Graduate School of Business, New York, NY — 2020-present
Ph.D. candidate in Decision, Risk and Operations division.
Advisors: Prof. Omar Besbes and Prof. Yash Kanoria

University of Michigan, Ann Arbor, MI — 2018-2020
Master of Science in Electrical and Computer Engineering.
Advisor: Prof. Vijay Subramanian

Indian Institute of Technology Madras, Chennai, India — 2014-2018
Bachelor of Technology in Electrical Engineering, minor in Robotics.
Advisor: Prof. Rahul Vaze, Tata Institute of Fundamental Research

Research Interests

I am broadly interested in the operations of online platforms. In particular, I develop models and methods to optimize the operations of these online platforms, with applications in order fulfillment, revenue management, matching markets and recommendation systems.

Journal Publications

Dynamic Resource Allocation: Algorithmic Design Principles and Spectrum of Achievable Performances with Omar Besbes and Yash Kanoria. *Forthcoming in Operations Research*

☛ An earlier version appeared with the title "**The Multi-secretary problem with many types**" as an extended abstract in *EC'22: ACM Conference on Economics and Computation.*

★ `Finalist, 2024 Michael H. Rothkopf Junior Researcher Paper Prize`
★ `Finalist, 2023 INFORMS George Nicholson Student Paper Competition`
★ `Finalist, 2023 Jeff McGill RMP Best Student Paper Prize`

Working Papers

Feature-Based Dynamic Matching with Yilun Chen, Yash Kanoria and Wenxin Zhang. *Major Revision in Operations Research*

☛ Appeared as an extended abstract in *EC'23: ACM Conference on Economics and Computation.*

The Fault in Our Recommendations: On the Perils of Optimizing the Measurable with Omar Besbes and Yash Kanoria. *Journal Version Under Preparation*

☛ An earlier version appeared in *RecSys'24: ACM Conference on Recommender Systems*

Impact of Rankings and Personalized Recommendations in Marketplaces with Omar Besbes and Yash Kanoria. *Journal Version Under Preparation*

Conference Publications

Breaking the Unit Throughput Barrier in Distributed System with Parikshit Hegde, Rahul Vaze, Amira Alloum, Cedric Adjih. *NCC'23: 29th National Conference on Communications*

Low-cost aerial imaging for small holder farmers with Ranveer Chandra et al. *COMPASS '19: Proceedings of the 2nd ACM SIGCAS Conference on Computing and Sustainable Societies*

★ `Best Paper Award at COMPASS'19`

Speed scaling under QoS constraints with finite buffer with Parikshit Hegde and Rahul Vaze. *WiOpt'18: 16th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks.*

Awards

Finalist, Michael H. Rothkopf Junior Researcher Paper Prize, 2024 (winner to be announced)
Rising Star, Stanford Management Science and Engineering, 2024
Finalist, INFORMS George Nicholson student paper competition, 2023
Finalist, Jeff McGill RMP Best Student Paper Prize, 2023
Deming Doctoral Fellowship, Columbia Business School, 2023-2024
Narula Doctoral Fellowship, Columbia Business School, 2023
Best Paper Award, COMPASS'19, 2019
Industry Category Winner at Microsoft Global Hackathon, 2016
Recipient of Kishore Vaigyanik Protsahan Yojana (KVPY) Fellowship by Government of India, 2014
Recipient of National Talent Search Examination (NTSE) scholarship by Government of India, 2011

Patents

US20180213186 A1 *Low-cost, Long-term Aerial Imagery*
US20180213187 A1 *Aerial imaging of a region using above ground aerial camera platform*

Industry Internships

Amazon, Bellevue, Washington — June 2023 - September 2023
Designed algorithms for multi-objective optimization for order fulfillment problems.

Nokia Bell Labs, Paris, France — May 2018 - August 2018
Developed decoding schemes for distributed wireless systems with applications in 5G.

Microsoft Research, Bangalore, India — June 2016 - August 2016
Built low cost solutions to enable precision agriculture for small farm holders.
★ `Industry Category Winner at Microsoft Global Hackathon`

Teaching Experience

Columbia University, **Teaching Assistant**

Business Analytics (MBA Core)	Fall 2023
Operations Management (EMBA Core)	Spring 2023
Business Analytics (EMBA core)	Spring 2022
Foundations of Optimization (PhD core)	Fall 2021

Professional Service

Co-organizer for the NYC Operations Day PhD Colloquium, 2024
Brown Bag (DRO Internal Seminar) series co-organizer, 2022-2024
DRO PhD student representative, 2022-2024
Reviewer for *Mathematics of Operations Research, Operations Research*

Selected Talks

The Fault in Our Recommendations: On the Perils of Optimizing the Measurable

Netflix, Online	November, 2024
RecSys'24: ACM Conference on Recommender Systems, Bari, Italy	October 2024

Dynamic Resource Allocation: Algorithmic Design Principles and Spectrum of Achievable Performances

WORDS, Duke Fuqua School of Business, Durham, NC	November 2024
Operations Rookiepalooza, Kellogg School of Management, Chicago, IL	October 2024
INFORMS Annual Conference, Seattle, WA	October 2024
Cornell Young Research Workshop, Ithaca, NY	October 2024
Purdue Operations Conference, West Lafayette, IN	August 2024
IEOR Seminar, IIT Bombay, Mumbai, India	August 2024
ISMP Conference, Montreal, Canada	July 2024
RMP Annual Conference, Los Angeles, CA	July 2024
MS&E Rising Stars Workshop, Stanford, CA	April 2024
INFORMS Annual Meeting, Phoenix, AZ	October 2023
Fulfillment Optimization Research Series, Amazon	August 2023
TIFR, Mumbai, India	May 2023

Feature-Based Dynamic Matching

INFORMS Annual Conference, Seattle, WA	October 2024
MSOM Annual Conference, Minneapolis, MN	July 2024
Marketplace Innovation Workshop, Online	May 2024
RMP Annual Conference, London, England	June 2023

The multi-secretary problem with many types

INFORMS Annual Meeting, Indianapolis, IN	October 2022
Economics and Computation, Boulder, CO	July 2022
MSOM Annual Conference, Munich	June 2022
RMP Annual Conference, Online	June 2022

Skills

Programming: Python, C/C++, MATLAB, HTML/CSS
Tools: Git, LaTeX