

Ayoub Foussoul

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EDUCATION

University of Chicago Booth School of Business

2025 –

Principal Researcher

Chicago, IL

Columbia University

2020 – 2025

Ph.D candidate in Operations Research

New York, NY

- Advisor: Vineet Goyal

- Thesis: Robust and Tractable Policies for Resource Allocation Under Uncertainty.

Ecole Polytechnique

2017 – 2020

Master of Science in Applied Mathematics

Paris, France

Bachelor of Science in Mathematics and Computer Science

Lycée Louis-le-Grand

2015 – 2017

Classes préparatoires, Mathematics, Physics, Computer Science

Paris, France

RESEARCH INTERESTS

Methodology: Deep Learning, Deep Reinforcement Learning, Sequential Decision Making under Uncertainty.

Applications: Supply Chain and Inventory Management, Matching Markets.

PAPERS

- [1] Distributionally Robust Newsvendor on a Metric ([link](#))
Ayoub Foussoul & Vineet Goyal.
Major Revision in **Operations Research**
Extended abstract appeared in proceedings of **EC 2025**
- [2] LP-based Approximations for Disjoint Bilinear and Two-Stage Adjustable Robust Optimization ([link](#))
Omar El Housni, Ayoub Foussoul & Vineet Goyal.
Mathematical Programming
Preliminary version appeared in proceedings of **IPCO 2022**
- [3] Two-Stage Stochastic Stable Matching ([link](#))
Ayoub Foussoul, Yuri Faenza & Chengyue He.
In proceedings of **IPCO 2024**
- [4] Minimum Cut Representability of Stable Matching Problems ([link](#))
Ayoub Foussoul, Yuri Faenza & Chengyue He.
Major Revision in **Operations Research**
★ Honorable Mention INFORMS Optimization Society, 2025 Student Paper Prize
- [5] Fully-Dynamic Load Balancing ([link](#))
Ayoub Foussoul, Vineet Goyal & Amit Kumar.
Minor Revision in **Mathematical Programming**
Preliminary version appeared in proceedings of **IPCO 2024**
- [6] Last Switch Dependent Bandits with Monotone Payoff Functions ([link](#))
Ayoub Foussoul, Vineet Goyal, Orestis Papadigenopoulos & Assaf Zeevi.
In proceedings of **ICML 2023**
- [7] MNL-Bandit in Non-Stationary Environments ([link](#))
Ayoub Foussoul, Vineet Goyal & Varun Gupta.

TECHNICAL REPORTS

- [1] Conditioning of Piecewise Linear Approximations with an Application to the Monitoring of the COVID-19 Epidemic
Marianne Akian, Jérôme Bolt, Ayoub Foussoul, Stephane Gaubert & Laurent Massoulié.
★ École Polytechnique Research Prize in Applied Mathematics

- [2] Identification of the Optimal Tropical Hypersurfaces Explaining Consumers' Responses to Prices
Xavier Allamigeon, Ayoub Foussoul & Stephane Gaubert.
 ★ École Polytechnique Research Prize in Applied Mathematics

TEACHING EXPERIENCE

Optimization I, IEOR E6613 Core PhD course on linear and convex optimization Teaching Assistant & Guest Lecturer	Fall 2021, 2022
Optimization II, IEOR E6614 Core PhD course on combinatorial optimization Teaching Assistant	Spring 2023, 2024, 2025
Convex Optimization, IEOR E6616 PhD course on convex optimization Teaching Assistant	Spring 2022
Optimization Methods, IEOR E4004 Core Master's course on optimization Teaching Assistant & Guest Lecturer	Fall 2023
Applications for Financial Engineering, IEOR E4500 Master's course on quantitative methods in financial engineering Teaching Assistant	Spring 2021
Academic Tutor, Le Valdocco Provided academic support and mentoring to underprivileged students at a non-profit educational organization	2017-2018

INDUSTRY EXPERIENCE

INRIA Research Intern <ul style="list-style-type: none"> Studied the VC-dimension of polynomials in tropical algebra. 	Mar 2020 - Sep 2020 Paris, France
Padoa Data Analyst Intern <ul style="list-style-type: none"> Designed and implemented data handling tools to streamline data processing and analysis. Developed APIs and web services to enhance system functionality and interoperability. 	Jun 2019 - Sep 2019 Paris, France

SERVICE AND OUTREACH

Elected Student Representative, École Polytechnique (Class of 2020)
 Co-organizer of IEOR PhD Tutorial Series
 Reviewer: Management Science, Mathematical Programming, Optimization Letters, NeurIPS MLxOR Workshop, INFORMS Journal on Computing, IPCO, SODA, STOC.

AWARDS

Honorable Mention in the INFORMS Optimization Society Student Paper Prize	2025
Postgraduate Excellence Scholarship (OCP Foundation)	2020
École Polytechnique Research Prize in Applied Mathematics	2020
French Government Major-Excellence Scholarship	2017

Distributionally Robust Newsvendor on a Metric

- INFORMS Annual Meeting, October 2025, Atlanta GA
- Revenue Management and Pricing Conference (RMP), July 2025, New York NY
- ACM Conference on Economics and Computation (EC), July 2025, Stanford CA
- Manufacturing & Services Operation Management Conference (MSOM), June 2025, London
- Columbia University Data Science Day, April 2025, New York NY (poster session)
- IEOR Colloquium, November 2024, New York NY
- INFORMS Annual Meeting, October 2024, Seattle WA
- Cornell ORIE Young Researchers Workshop, October 2024, Ithaca NY
- Northwestern Kellogg Operations Management Rookiepalooza, October 2024, Evanston IL

Two-Stage Stochastic Stable Matching

- Integer Programming and Combinatorial Optimization Conference (IPCO), July 2024, Wrocław
- Columbia University Data Science Day, April 2024, New York NY (poster session)

Fully-Dynamic Load Balancing

- Integer Programming and Combinatorial Optimization Conference (IPCO), July 2024, Wrocław
- Columbia IEOR Student Seminar, February 2024, New York NY

Last Switch Dependent Bandits with Monotone Payoff Functions

- International Conference on Machine Learning (ICML), July 2023, Honolulu HI (poster session)

MNL-Bandit in Non-Stationary Environments

- DSI Financial and Business Analytics Poster Session, November 2023, New York NY (poster session)
- INFORMS Annual Meeting, October 2023, Phoenix AZ
- Revenue Management and Pricing Conference (RMP), July 2023, London

LP-based Approximations for Disjoint Bilinear and Two-Stage Adjustable Robust Optimization

- International Symposium on Mathematical Programming (ISMP), July 2024, Montréal
- International Research and Innovation Seminar (IRIS), December 2023, Ben Guerir
- INFORMS Annual Meeting, October 2022, Indianapolis IN
- International Conference on Continuous Optimization (ICCOPT), July 2022, Bethlehem PA
- Integer Programming and Combinatorial Optimization Conference (IPCO), June 2022, Eindhoven
- INFORMS Optimization Society Conference (IOS), March 2022, Greenville SC