

Adam N. Elmachtoub

535G S.W. Mudd Building
500 W 120th St, NY, NY
www.columbia.edu/~ae2516/
adam@ieor.columbia.edu
Updated March 31, 2024

EDUCATION

Massachusetts Institute of Technology

Ph.D. in Operations Research

Cambridge, MA

September 2009 - June 2014

- Advisor: Retsef Levi
- Track: Operations Management
- Thesis: *New Approaches for Integrating Revenue and Supply Chain Management*

Cornell University

B.S. (with Honors) in Operations Research and Engineering

Ithaca, NY

August 2006 - May 2009

- Minor: Applied Mathematics

EMPLOYMENT

Columbia University

New York, NY

Department of Industrial Engineering and Operations Research (IEOR)
Data Science Institute (DSI)

- Associate Professor (with tenure), July 2023 - present
- Associate Professor (without tenure), January 2021 - June 2023
- Assistant Professor, August 2015 - December 2020

Amazon

Virtual

Middle Mile Marketplace Science

- Amazon Visiting Academic, July 2022 - present

IBM

Yorktown Heights, NY

Department of Business Analytics and Mathematical Sciences

- Postdoctoral Researcher, August 2014 - July 2015

INDUSTRY EXPERIENCE

Kids of Immigrants (streetwear, 2023), For Promotional (B2B retail in Mexico, 2023), Justrite (grocery store chain in Nigeria, 2022), Amazon (e-commerce, 2022-present), NYC Mayor's Office (pandemic logistics, 2020-2021), FreshDirect (online grocery, 2019-2021), Graham Windham (foster care, 2018-2020), MediaMath (online advertising, 2017-2019), Dassault Falcon (private jets, 2016-2019), IBM (analytics, 2014-2016), Tampa Bay Rays (baseball, 2012), Novartis (pharmaceuticals, 2012), ZS Associates (consulting, 2008)

FIELDS OF SPECIALIZATION

Prescriptive Analytics, Revenue Management & Pricing, Machine Learning, Supply Chain & Logistics

ADVISING

Postdoctoral Researchers

- Mingliu Chen (2023, co-advised with David Yao)
Assistant Professor at University of Texas at Dallas, Naveen Jindal School of Management

Ph.D. Students

- Jiaqi Shi
- Hyemi Kim (Deming Doctoral Fellow)
- Abdellah Aznag (co-advised with Rachel Cummings)
- Haofeng Zhang (2024, co-advised with Henry Lam, Cheung-Kong Innovation Doctoral Fellow)
- Harsh Sheth (2023, co-advised with Vineet Goyal)
Simplifying Revenue Management
Quantitative Researcher at Susquehanna International Group (SIG)
- Yunfan Zhao (2023)
Integrating Machine Learning and Optimization for Contextual Decision-Making and Dynamic Learning
Postdoctoral Fellow at the Harvard Center for Research on Computation and Society
- Jacob Bergquist (2023, co-advised with Karl Sigman)
Three Sojourns in Queueing Theory
Quantitative Researcher at Andreessen Horowitz (a16z)
- Xiao Lei (2022, Cheung-Kong Innovation Doctoral Fellow and Deming Doctoral Fellow)
Revenue Management in Video Games and with Fairness
Assistant Professor at University of Hong Kong, HKU Business School
- Yeqing Zhou (2021, Cheung-Kong Innovation Doctoral Fellow)
Supply Chain and Service Operations with Demand-Side Flexibility
Assistant Professor at Eindhoven University of Technology (TU/e), Industrial Eng. & Innovation Sciences
- Ryan McNellis (2019, Deming Doctoral Fellow)
Training Decision Trees for Optimal Decision-Making
Applied Research Scientist at Amazon
- Yunjie Sun (2019, Deming Doctoral Fellow)
Pricing Analytics for Reusable Resources
Senior Data Scientist at Tripadvisor, now at ASML
- Michael Hamilton (2019)
Pricing Tools and Analysis for Emerging e-Commerce Technologies
Assistant Professor at University of Pittsburgh, Katz Graduate School of Business

Ph.D. Thesis Committee Member: Madhumitha Shridharan, Jerry Anunrojwong (Columbia Business School), Steven Yin (2022), Sai Mali Ananthanarayanan (2022), Saman Lagzi (2022, University of Toronto), Yuan Gao (2022), Jingtong Zhao (2021), Fengpei Li (2021), Kumar Goutam (2020), Shuoguang Yang (2020), Min-hwan Oh (2020), Randy Jia (2020), Vladlena Powers (2020), Zhe Liu (2019, Columbia Business School),

Ashraf Chamseddine (2019, American University of Beirut), Suraj Keshri (2019), Shuangyu Wang (2018), Francois Fagan (2018), Xinshang Wang (2017)

M.S. Students: Jiaqi Shi (2021 → Columbia Ph.D.), Weixuan Tang (2020), Zining Fan (2020 → Rutgers Ph.D.), Othman El Balghiti (2019), Alexandra Tardif (2018), Xiao Lei (2018 → Columbia Ph.D.), Cheng Guo (2017 → U. Toronto Ph.D.), Yeqing Zhou (2016 → Columbia Ph.D.)

B.S. Students: Subashree Venkatasubramanian (2023), Inesse Jibre (2023), Alexander Jermann (2021), Chiara Régniez (2020 → Columbia M.S.), Alysha Hudson (2020), Jinglei Zhang (2019), Jason Liang (2018 → MIT Ph.D.), Omar Abboud (2016 → Harvard M.S.)

AWARDS

- Great Teacher Award, Society of Columbia Graduates, 2021
- 1st place, INFORMS Junior Faculty Interest Group (JFIG) Paper Competition, 2020
- NSF CAREER Award, 2020
- Finalist, Daniel H. Wagner Prize for Excellence in Operations Research Practice, 2019
- Finalist, INFORMS Revenue Management and Pricing (RMP) Practice Award, 2019
- Finalist, INFORMS Best Cluster Paper Award in Service Science, 2018
- IBM Faculty Award, 2016
- Forbes 30 under 30 in science, 2016
- National Defense Science and Engineering Graduate (NDSEG) Fellow, AFOSR, 2009-2012
- MIT Charles M. Vest Presidential Fellow, 2009
- Degree Marshall for Cornell University, 2009 (Top 2 Graduating Students in School of Engineering)
- Byron W. Saunders Prize, 2009 (Top 2 Graduating Students in Cornell School of ORIE)
- Merrill Presidential Scholar, 2009 (Top 1% Graduating Students at Cornell University)

AWARDS FOR STUDENT CO-AUTHORS

- Finalist for advisee Haofeng Zhang, INFORMS George Nicholson Student Paper Competition, 2023.
- Honorable Mention for advisee Xiao Lei, INFORMS George B. Dantzig Dissertation Award, 2023.
- Finalist for advisee Xiao Lei, INFORMS Revenue Management and Pricing (RMP) Jeff McGill Student Paper Award, 2022
- 3rd place for advisee Xiao Lei, INFORMS IBM Best Student Paper Award in Service Science, 2022
- 1st place for advisee Xiao Lei, INFORMS IBM Best Student Paper Award in Service Science, 2019

FUNDING

Total funding so far (my portion) is **\$1,584,382**.

- National Science Foundation (with Amazon), IIS-2147361 - *FAI: AI Algorithms for Fair Auctions, Pricing, and Marketing* (PI, with co-PIs Shipra Agrawal, Eric Balkanski, Rachel Cummings, and Christian Kroer), 2022-2025 (\$628,789, my portion \$125,758)
- National Science Foundation, CMMI-1944428 - *CAREER: Enhancing E-commerce and Service Systems by Embracing Consumer Flexibility* (PI), 2020-2025 (\$594,418)
- Columbia University - Technology Innovations for Urban Living in the Face of COVID-19, *Designing Safe Elevator Systems amidst a Pandemic* (PI with Charles Branas and Cliff Stein), 2020-2021 (\$85,000)
- Dassault Falcon Jet - Industry Collaboration (PI), 2019 (\$132,500)
- National Science Foundation, CMMI-1763000 - *Collaborative Research: Operations-Driven Machine Learning* (PI), 2018-2023 (\$314,206)
- Dassault Falcon Jet - Industry Collaboration (PI), 2018 (\$142,500)
- Dassault Falcon Jet - Industry Collaboration (PI), 2017 (\$150,000)
- IBM Faculty Award - *Cognitive Analytics for Personalized Pricing and Offers*, 2016 (\$40,000)

PUBLICATIONS

Notes: (i) Underlined authors are my advisees. (ii) The default author order is alphabetical. (iii) Citation counts here: <https://scholar.google.com/citations?user=Z-CFWPwAAAAJ&hl=en>

1. *An Active Learning Framework for Multi-group Mean Estimation*.
Abdellah Aznag, Rachel Cummings, and Adam N. Elmachtoub.
Neural Information Processing Systems 37 (NeurIPS), 2023.
2. *Generalization Bounds in the Predict-then-Optimize Framework*.
Othman El Balghiti, Adam N. Elmachtoub, Paul Grigas, and Ambuj Tewari.
Mathematics of Operations Research, Vol. 48(4), p. 2043-2065, 2023.
 - Accepted to *Neural Information Processing Systems 33 (NeurIPS)*, 2019.
3. *Market Segmentation Trees*.
Ali Aouad, Adam N. Elmachtoub, Kris J. Ferreira, and Ryan McNellis.
Manufacturing & Service Operations Management, Vol. 25(2), p. 648-667, 2023.
4. *Balanced Off-Policy Evaluation for Personalized Pricing*.
Adam N. Elmachtoub, Vishal Gupta, and Yunfan Zhao.
International Conference on Artificial Intelligence and Statistics (AISTATS), p. 10901-10917, 2023.
5. *Price Discrimination with Fairness Constraints*.
Maxime C. Cohen, Adam N. Elmachtoub, and Xiao Lei.
Management Science, Vol. 68(12), p. 8536-8552, 2022.
 - Honorable Mention for Xiao Lei (part 3 of 3), INFORMS George B. Dantzig Dissertation Award, 2023.

- Finalist for Xiao Lei, INFORMS Revenue Management and Pricing (RMP) Jeff McGill Student Paper Award, 2022.
 - Accepted to The 4th ACM Conference on Fairness, Accountability, and Transparency (**FAccT**), 2021.
 - Feature article, discussion in Management Science Review.
6. *Revenue Management with Product Retirement and Customer Selection*.
Adam N. Elmachtoub, Vineet Goyal, Roger Lederman, and Harsh Sheth.
Proceedings to The 18th Conference on Web and Internet Economics (**WINE**), 2022.
7. *Queueing Safely for Elevator Systems amidst a Pandemic*.
Sai Mali Ananthanarayanan, Charles C. Branas, Adam N. Elmachtoub, Clifford Stein, and Yeqing Zhou.
Production and Operations Management, Vol. 31(5), p. 2306-2323, 2022.
- Accepted to The 1st ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (**EAAMO**), 2021.
8. *Static Pricing: Universal Guarantees for Reusable Resources*.
Omar Besbes, Adam N. Elmachtoub, and Yunjie Sun.
Operations Research, technical note, Vol. 70(2), p. 1143-1152, 2022.
- Accepted to The 20th ACM Conference on Economics and Computation (**EC**), 2019.
 - Finalist (part 1 of 2), INFORMS Revenue Management and Pricing (RMP) Practice Award, 2019.
9. *Smart “Predict, then Optimize”*.
Adam N. Elmachtoub and Paul Grigas.
Management Science, Vol. 68(1), p. 9-26, 2022.
- 1st place, INFORMS Junior Faculty Interest Group (JFIG) Paper Competition, 2020.
 - Feature article, discussion in Management Science Review.
10. *The Value of Personalized Pricing*.
Adam N. Elmachtoub, Vishal Gupta, and Michael L. Hamilton.
Management Science, Vol. 67(10), p. 6055-6070, 2021.
- Accepted to The 15th Conference on Web and Internet Economics (**WINE**), 2019.
 - Finalist, INFORMS Best Cluster Paper Award in Service Science, 2018.
11. *Loot Box Pricing and Design*.
Ningyuan Chen, Adam N. Elmachtoub, Michael L. Hamilton, and Xiao Lei.
Management Science, Vol. 67(8), p. 4809–4825, 2021.
- Honorable Mention for Xiao Lei (part 1 of 3), INFORMS George B. Dantzig Dissertation Award, 2023.
 - Accepted to The 21st ACM Conference on Economics and Computation (**EC**), 2020.
 - Invited to present at the Federal Trade Commission (FTC) Workshop on Consumer Issues Related to Loot Boxes, 2019 (one of four research papers selected).
 - 1st place for Xiao Lei, INFORMS IBM Best Student Paper Award in Service Science, 2019.
12. *The Power of Opaque Products in Pricing*.
Adam N. Elmachtoub and Michael L. Hamilton.
Management Science, Vol. 67(8), p. 4686–4702, 2021.
- Accepted to The 13th Conference on Web and Internet Economics (**WINE**), 2017.

- Feature article, discussion in Management Science Review.
13. *Decision Trees for Decision-Making under the Predict-then-Optimize Framework*.
Adam N. Elmachtoub, Jason C. N. Liang, and Ryan McNellis.
Proceedings of the 37th International Conference on Machine Learning (**ICML**), p. 2858-2867, 2020.
 14. *Pricing Analytics for Rotable Spare Parts*.
Omar Besbes, Adam N. Elmachtoub, and Yunjie Sun.
INFORMS Journal on Applied Analytics, Vol. 50(5), p. 313-324, 2020.
 - Finalist, Daniel H. Wagner Prize for Excellence in Operations Research Practice, 2019.
 - Finalist (part 2 of 2), INFORMS Revenue Management and Pricing (RMP) Practice Award, 2019.
 15. *A Practical Method for Solving Contextual Bandit Problems Using Decision Trees*.
Adam N. Elmachtoub, Ryan McNellis, Sechan Oh, and Marek Petrik.
Proceedings of the 33rd Conference on Uncertainty in Artificial Intelligence (**UAI**), 2017.
 - Invited for oral presentation (top 10% of submissions).
 16. *Supply Chain Management with Online Customer Selection*.
Adam N. Elmachtoub and Retsef Levi.
Operations Research, Vol. 64(2), p. 458-473, 2016.
 17. *The Submodular Joint Replenishment Problem*.
Maurice Cheung, Adam N. Elmachtoub, Retsef Levi, and David B. Shmoys.
Mathematical Programming, Vol. 158(1), p. 207-233, 2016.
 18. *From Cost Sharing Mechanisms to Online Selection Problems*.
Adam N. Elmachtoub and Retsef Levi.
Mathematics of Operations Research, Vol. 40(3), p. 542-557, 2015.
 - INFORMS President's Pick for October 2015.
 19. *New Approaches for Integrating Revenue and Supply Chain Management*.
Adam N. Elmachtoub.
Massachusetts Institute of Technology Ph.D. Thesis, 2014.
 20. *Maximizing the Spread of Cascades Using Network Design*.
Daniel Sheldon, Bistra Dilkina, Adam N. Elmachtoub, Ryan Finseth, Ashish Sabharwal, Jon Conrad, Carla Gomes, David Shmoys, William Allen, Ole Amundsen, and William Vaughan.
Proceedings of the 26th Conference on Uncertainty in Artificial Intelligence (**UAI**), p. 517-526, 2010.
 - Invited for oral presentation (top 12% of submissions).
 21. *From Random Polygon to Ellipse: An Eigenanalysis*.
Adam N. Elmachtoub and Charles F. Van Loan.
SIAM Review, Vol. 52(1), p. 151-170, 2010.
 - Charles F. Van Loan selected this work as the subject for his 2018 John von Neumann Lecture.

SUBMITTED PAPERS

22. *Fair Fares for Vehicle Sharing Systems*.
Adam N. Elmachtoub and Hyemi Kim.

23. *Simple Policies for Joint Pricing and Inventory Management.*
Adam N. Elmachtoub, [Harsh Sheth](#), and [Yeqing Zhou](#).
24. *Static Pricing Guarantees for Queueing Systems.*
[Jacob Bergquist](#) and Adam N. Elmachtoub.
25. *Estimate-Then-Optimize Versus Integrated-Estimation-Optimization Versus Sample Average Approximation: A Stochastic Dominance Perspective.*
Adam N. Elmachtoub, Henry Lam, [Haofeng Zhang](#) and [Yunfan Zhao](#).
 - Finalist for Haofeng Zhang, INFORMS George Nicholson Student Paper Competition, 2023.
26. *The Power of Static Pricing for Reusable Resources.*
Adam N. Elmachtoub and [Jiaqi Shi](#).
27. *Matchmaking Strategies for Maximizing Player Engagement in Video Games.*
[Mingliu Chen](#), Adam N. Elmachtoub, and [Xiao Lei](#).
 - Honorable Mention for Xiao Lei (part 2 of 3), INFORMS George B. Dantzig Dissertation Award, 2023.
 - Accepted to The 23rd ACM Conference on Economics and Computation (**EC**), 2022.
 - 3rd place for Xiao Lei, INFORMS IBM Best Student Paper Award in Service Science, 2022.
28. *The Value of Flexibility from Opaque Selling.*
Adam N. Elmachtoub, David D. Yao, and [Yeqing Zhou](#).
29. *Retailing with Opaque Products.*
Adam N. Elmachtoub, Yehua Wei, and [Yeqing Zhou](#).

TEACHING

- **Columbia University**

Instructor - Data provided is (Number of Students, Interpolated Median of Course Rating out of 5, Interpolated Median of Instructor Rating out of 5)

- Pricing Strategy (Entrepreneurship and Competitiveness in Latin America (ECLA)): Winter 2023
- EL 7011 - Data Analytics for Law (Executive L.L.M.): Summer 2020, Summer 2021
- IEOR 4418 - Transportation Analytics and Logistics (B.S./M.S elective): Fall 2016 (18, 4.83, 4.88), Spring 2018 (31, 4.94, 4.92), Spring 2019 (27, 4.77, 4.85), Spring 2020 (25, N/A due to covid-19), Spring 2021 (15, 4.91, 4.91), Spring 2022 (41, 4.78, 4.91), Spring 2023 (21, 4.91, 4.85)
- IEOR 4650 - Business Analytics (B.S.): Spring 2017 (20, 4.92, 4.86), Spring 2018 (55, 4.64, 4.73), Spring 2020 (33, N/A due to COVID-19), Spring 2021 (41, 4.63, 4.63), Spring 2023 (36, 4.76, 4.79)
- IEOR 4650 - Business Analytics (M.S.): Spring 2016 (62, 4.52, 4.48), Spring 2017 (72, 4.71, 4.85), Spring 2018 (47, 4.83, 4.92), Spring 2019 x2 (76/78, 4.25, 4.27), Fall 2020 (63, 4.71, 4.83), Spring 2022 (76, 4.50, 4.70), Spring 2023 (31, 4.76, 4.79)
- IEOR 8100 - Supply Chain Management (Ph.D.): Spring 2016 (10, 4.92, 5.00)
- IEOR 8100 - Contextual Optimization for Prescriptive Analytics (Ph.D.): Fall 2019 (9, 4.88, 5.00)

- **Massachusetts Institute of Technology**

Teaching Assistant

– 15.734 - Operations Management (Executive MBA): Spring 2013 (6.68/7)

– 15.060 - Data, Models, and Decisions (MBA): Fall 2012 (4.47/5)

- **Cornell University**

Teaching Assistant

– ORIE 3300/5300 - Optimization I (B.S./ M. Eng.): Fall 2008 (4.57/5)

– ENGRG 2940 - Academic Excellence Workshop for Linear Algebra (B.S.): Fall 2007

PATENTS

Adam N. Elmachtoub and Roger Lederman. Revenue management using dynamic customer selection. US Patent 11151604, 2021 (granted).

Adam N. Elmachtoub, Markus R. Ettl, Sechan Oh, Marek Petrik, and Rajesh K. Ravi. Determining feature importance and target population in the context of promotion recommendation. US Patent 10546320, 2020 (granted).

INVITED TALKS

- Columbia University, Data Science Day, New York, NY, April 2024
- George Washington University, Decision Sciences Seminar, Washington, DC, March 2024
- Bilkent University, IE Seminar, Virtual, February 2024
- University of North Carolina, Kenan-Flagler Operations Seminar, Chapel Hill, NC, February 2024
- Massachusetts Institute of Technology, ORC IAP Seminar, Cambridge, MA, January 2024
- Machine Learning NeEDS Mathematical Optimization, Online Seminar, Virtual, November 2023
- Rutgers University, MSIS Seminar, New Brunswick, NJ, April 2023
- University of Michigan, Ross T&O Seminar, Ann Arbor, MI, February 2023
- University of Virginia, Darden Dana Clyman Seminar, Charlottesville, VA, December 2022
- University of Science and Technology of China, School of Management Seminar, Virtual, December 2022
- Northwestern University, Kellogg Operations Seminar, Evanston, IL, November 2022
- Wilfrid Laurier University, Lazaridis SCM Distinguished Speaker Series, Virtual, November 2022
- Cornell University, ORIE Seminar, Ithaca, NY, October 2022
- London Business School, MSO Seminar, Virtual, October 2022
- Rotterdam School of Management, TOM Seminar, Virtual, October 2022
- Yale University, SOM Operations Seminar, New Haven, CT, October 2022

- Amazon, Virtual, June 2022
- Flexport, Virtual, March 2022
- Lyft, Virtual, March 2022
- University of Southern California, ISE Seminar, Virtual, March 2022
- DoorDash, Virtual, February 2022
- UT Austin, McCombs IROM Seminar, Austin, TX, November 2021
- University of Western Ontario, Ivey Seminar, Virtual, November 2021
- HKUST Business School, ISOM Seminar, Virtual, October 2021
- University of British Columbia, Sauder OpLog Seminar, Vancouver, CA, October 2021
- CPAIOR, **Invited Speaker**, Virtual, July 2021
- Canadian OR Society (CORS) Annual Conference, **Invited Tutorial**, Virtual, June 2021
- Arizona State University, IE Decision Systems Engineering Seminar, Virtual, April 2021
- Boston College, Carroll BA Seminar, Virtual, April 2021
- New York University, Stern IOMS Seminar, Virtual, March 2021
- Unilever, Keynote Speaker at Gobal Data Science Conference, Virtual, November 2020
- Massachusetts Institute of Technology, ORC Seminar, Virtual, October 2020
- Boğaziçi University, IE Seminar, Virtual, October 2020
- Duke University, Fuqua OM Seminar, Virtual September 2020
- Georgia Tech, ISyE Seminar, Virtual, September 2020
- American University of Beirut, IE Seminar, Virtual, September 2020
- Baruch College, Zicklin Omega Seminar, Virtual, September 2020
- Rutgers University, ISE Seminar, Piscataway, NJ, February 2020
- University of Toronto, MIE OR Seminar, Toronto, CN, December 2019
- McGill University, Desautels OM Seminar, Montreal, CN, December 2019
- Columbia University, Business Analytics Initiative, New York, NY, November 2019
- Lehigh University, ISE Seminar, Bethlehem, PA, September 2019
- University of Rochester, Simon OM Seminar, Rochester, NY, May 2019
- University of Michigan, IOE Seminar, Ann Arbor, MI, March 2019
- UCLA, Anderson DOTM Seminar, Los Angeles, CA, November 2018

- Columbia University, IEOR Colloquium, New York, NY, November 2018
- Institute of Mathematics and Applications, U. of Minnesota, Minneapolis, MN, October 2018
- Uber, San Francisco, CA, August 2018
- Massachusetts Institute of Technology, Sloan OM Seminar, Cambridge, MA, May 2018
- Yahoo Research, New York, NY, May 2018
- UC Berkeley, IEOR Seminar, Berkeley, CA, September 2017
- University of Southern California, Marshall DSO Seminar, Los Angeles, CA, September 2017
- Mostly OM, Tsinghua University, Beijing, China, May 2017
- Jet.com, Hoboken, NJ, March 2017
- New York University, Stern IOMS Seminar, New York, NY, October 2016
- Columbia University, Business Analytics Initiative, New York, NY, November 2016
- Dassault Falcon Jet, Little Ferry, NJ, July 2016
- IBM T.J. Watson Research Center, AP For Lunch, Yorktown Heights, NY, July 2015
- Duke University, Fuqua DS Seminar, Durham, NC, March 2015
- IBM T.J. Watson Research Center, IP For Lunch, Yorktown Heights, NY, March 2015
- IBM T.J. Watson Research Center, Yorktown Heights, NY, May 2014
- Stanford University, MS&E Seminar, Stanford, CA, February 2014
- Columbia University, IEOR Seminar, New York, NY, February 2014
- University of Chicago, Booth OM Seminar, Chicago, IL, February 2014
- New York University, Stern IOMS Seminar, New York, NY, February 2014
- Yale University, School of Management OM/OR Seminar, New Haven, CT, January 2014
- London Business School, MSO Seminar, London, England, January 2014
- INSEAD Business School, TOM Seminar, Paris, France, January 2014
- IESE Business School, PTOM Seminar, Barcelona, Spain, January 2014
- University of Southern California, Marshall DSO Seminar, Los Angeles, CA, January 2014
- University of Toronto, Rotman OMS Seminar, Toronto, Canada, January 2014
- University of Pennsylvania, Wharton OPIM Seminar, Philadelphia, PA, January 2014
- Cornell University, ORIE Seminar, Ithaca, NY, December 2013
- Harvard-MIT OM Student Seminar, Boston, MA October 2011
- Massachusetts Institute of Technology, Sloan OM Seminar, Cambridge, MA, February 2011

CONFERENCE AND WORKSHOP PRESENTATIONS

*A * symbol implies I attended but the presentation was given by a coauthor.*

- Mathematical Foundations for Equity in Transportation Systems, Institute for Pure and Applied Mathematics at UCLA, Los Angeles, CA, January 2024
- NSF Fairness in AI PI Meeting, Arlington, VA, January 2024
- INFORMS Annual Meeting, Phoenix, AZ, October 2023*
- WINE, Troy, NY, December 2022*
- INFORMS Annual Meeting, Indianapolis, IN, October 2022*
- EC, Boulder, CO, July 2022*
- MSOM Conference, Munich, DE, June 2022*
- CPAIOR, Los Angeles, CA, June 2022
- INFORMS Annual Meeting, Anaheim, CA, October 2021
- Revenue Management & Pricing Conference, Virtual, June 2021
- MSOM Conference, Virtual, June 2021*
- Canadian OR Society (CORS) Annual Conference, Virtual, June 2021
- Crossing Disciplines: Studying Fairness, Bias, and Inequality in Management and Decision Sciences Research, Harvard Business School, Virtual, May 2021
- FAccT, Virtual, March 2021*
- INFORMS Annual Meeting, Virtual, November 2020
- MD4SG, Virtual, August 2020*
- UC Berkeley, Berkeley-Columbia Meeting in Eng. and Statistics, Berkeley, CA, February 2020
- NeurIPS, Vancouver, Canada, December 2019*
- INFORMS Annual Meeting, Seattle, WA, October 2019
- Revenue Management & Pricing Conference, Stanford, CA, June 2019
- Machine Learning in Science and Engineering (MLSE) Conference, Atlanta, GA, June 2019
- EC, Phoenix, AZ, June 2019
- INFORMS Annual Meeting, Phoenix, AZ, November 2018*
- MSOM Conference, Dallas, TX, July 2018*
- EURO Conference, Barcelona, SP, July 2018
- Conference on Statistical Learning and Data Science, New York, NY, June 2018

- Revenue Management & Pricing Conference, Toronto, CN, June 2018
- ISMP Conference, Bordeaux, France, July 2018*
- INFORMS Optimization Society Meeting, Denver, CO, May 2018
- MSOM Conference, Chapel Hill, NC, June 2017*
- INFORMS Annual Meeting, Houston, TX, October 2017
- INFORMS Annual Meeting, Nashville, TN, November 2016
- ICCOPT, Tokyo, Japan, August 2016
- Revenue Management & Pricing Conference, New York, NY, June 2016*
- POMS Annual Conference, Orlando, FL, May 2016
- INFORMS Annual Meeting, Philadelphia, PA, November 2015
- Revenue Management & Pricing Conference, New York, NY, June 2015
- MSOM Conference, Toronto, Canada, June 2015
- ISMP Conference, Pittsburgh, PA, June 2015
- INFORMS Annual Meeting, San Francisco, CA, November 2014
- INFORMS Annual Meeting, Minneapolis, MN, October 2013
- MSOM Conference, New York, NY, June 2012
- INFORMS Annual Meeting, Phoenix, AZ, October 2012
- ISMP Conference, Berlin, Germany, August 2012
- INFORMS Annual Meeting, Charlotte, NC, November 2011
- MSOM Conference, Ann Arbor, MI, June 2011
- INFORMS Annual Meeting, Austin, TX, November 2010

INVITED PANELS / GUEST LECTURES

- *Contextual Linear Optimization*, Convex Optimization by Yehua Wei at Duke, November 2023
- *Life in Academia and How to Get There*, Columbia IEOR PhD Town Hall, May 2023
- *Queueing Models in Practice*, Probabilistic Modeling in OR by Ahmed Aziz Ezzat at Rutgers, December 2021
- *Pricing Analytics*, Columbia Summer Undergraduate Research Experiences in Mathematical Modeling, July 2021
- *The Next Normal: Industry Leaders on What to Expect Post-Pandemic*, Columbia Arab Alumni Association, April 2021

- *Contextual Optimization*, Statistical Learning for Operations by David Simchi-Levi at MIT, April 2021
- *Selling Random Stuff*, Intro to OR Freshman Seminar, January 2021, February 2022, February 2023
- *Preparing a CAREER Proposal*, INFORMS New Faculty Colloquium, November 2020
- *Contextual Optimization*, ML for Algorithm Design by Eric Balkanski at Columbia, October 2020
- *Personalized Pricing and Fairness*, AI4ALL, June 2020
- *Pricing Analytics*, Intro to OM by Vishal Gupta at USC, April 2020
- *Optimization*, MIT ORC 65th Anniversary, November 2018
- *Engineering your Ph.D.*, Columbia, August 2018
- *Selling Random Stuff*, Egleston Scholar Seminar at Columbia, August 2018

ACADEMIC SERVICE

Co-founder and co-organizer of NYC Operations Day (2018 at NYU, 2019 at Columbia, 2022 at Cornell Tech, 2023 at Columbia)

Co-organizer of Columbia Workshop on Fairness in Operations and AI, 2023

Associate Editor for *Operations Research* (2024-present)

Associate Editor for *Management Science* (2021-present)

Associate Editor for *Manufacturing & Service Operations Management* (2021-present)

Senior Editor for *Production and Operations Management* (2021-2023)

Associate Editor for *Service Science* (2019-2023)

Cluster Chair, *Fairness in Operations* at INFORMS 2023

Co-chair of MSOM Supply Chain SIG Conference, Kelley School of Business, Indiana U, June 2021

Panelist, National Science Foundation (NSF), Operations Engineering (OE) program (2019, 2022), Small Business Innovation Research (SBIR) program (2021)

Co-organizer of Master Class day CPAIOR (2022), *End-to-end Learning and Optimization*

Co-chair of Industrial Engineering and Operations Research track, Machine Learning in Science and Engineering (MLSE) conference, Georgia Tech, June 2019

Session Chair for INFORMS (2015-2021), EURO (2018)

Journal Reviewer for *Management Science* (Meritorious Service Award in 2017, 2019, 2021, and 2022, Distinguished Service Award in 2020), *Mathematics of Operations Research*, *Operations Research*, *Mathematical Programming*, *Mathematical Programming Computation*, *Manufacturing & Service Operations Management*, *Transportation Science*, *Production and Operations Management*, *Mathematical Programming Computation*, *Naval Research Logistics*, *INFORMS Journal on Optimization*, *npj Digital Medicine*, *European Journal of Operations Research*, and *Mathematical Methods of Operations Research*

Senior Program Committee member for *Economics and Computation (EC)* (2024)

Program Committee member for *Economics and Computation (EC)* (2020-2023), *Revenue Management and Pricing (RMP)* (2022), *Fairness, Accountability, and Transparency (FAccT)* (2022-2023), and *Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO)* (2022)

Conference Reviewer for *MSOM Supply Chain SIG Conference* (2015), *MSOM Service Operations SIG Conference* (2018), *Conference on Uncertainty in Artificial Intelligence (UAI)* (2019), *International Conference in Machine Learning (ICML)* (2019), *Conference on Integer Programming and Combinatorial Optimization (IPCO)* (2020), and *International Conference on Artificial Intelligence and Statistics (AISTATS)* (2021)

Judge for INFORMS Data Mining Best Paper Award (2023), INFORMS JFIG Paper Competition (2023), George Nicholson Student Paper Competition (2020-2021), MSOM Student Paper Competition (2021-2023), and POM Supply Chain College Student Paper Competition (2016-2018, 2020-2021, 2024)

UNIVERSITY SERVICE

Helped lead initiatives in modernizing course names (Spring 2016), business analytics programs (Fall 2016-Fall 2017), website (Fall 2018-Spring 2020, Spring 2022-Spring 2024)

Co-chair of Ph.D. Admissions Committee (2023-present)

Co-director of M.S. OR and M.S. IE programs (2022-2023)

Columbia IEOR DEI Committee (2022-present)

Columbia IEOR representative for dual degree program with Ecole Polytechnique (2023-present)

Columbia IEOR Ph.D. Admissions Committee (2016-2018, 2020-2021, 2023)

Columbia IEOR M.S. Admissions Committee (2016-2022)

Columbia IEOR Hiring Committee (2016-2017, 2017-2018, 2018-2019, 2021-2022)

Co-organizer of 1st Year Ph.D. Seminar (Fall 2016-Fall 2020)

Co-organizer of IEOR Colloquium (Fall 2018-present)

Co-organizer of IEOR-DRO Seminar (Fall 2015-Fall 2017)

Faculty advisor for Columbia INFORMS student chapter, (Spring 2016-Spring 2022). *The chapter has earned the INFORMS Student Chapter Annual Award: Cum Laude in 2016 and 2017.*

Faculty advisor for Columbia Mathematical Contest in Modeling (MCM) team (2017-2019). *Team received Finalist designation in 2017 and Meritorious Winner in 2018 and 2019.*

Judge for DSI Best Student Project Competition, 2021

Columbia DSI Hiring Committee (2015-2016)

Columbia DSI M.S. Admissions Committee (2020-2023)

Columbia DSI Postdoctoral Fellows Hiring Committee (2020)

Proposal Reviewer for Columbia SEAS Interdisciplinary Research Seed (SIRS) (2018, 2023)

Founder of MIT Mathematical Contest in Modeling (MCM) Competition

Founder of MIT ORC Resources for Easing Friction and Stress (REFS) Program

MIT Teaching Certificate, 2012

Co-organizer of Fall 2012 MIT Operations Research Seminar

MEDIA COVERAGE

"TinyBuild shut down Versus Evil on the last day before Christmas / This Week in Business." Games Industry. January 6, 2024.

<https://www.gamesindustry.biz/>

[tinybuild-shut-down-versus-evil-on-the-last-day-before-christmas-this-week-in-business](#)

“Opinion: Here are the jobs AI will impact most.” CNN. September 5, 2023.

<https://www.cnn.com/2023/09/05/opinions/artificial-intelligence-jobs-labor-market/index.html>

“The Interplay between Operations Research and Machine Learning.” ORMS Today. March 24, 2023.

<https://pubsonline.informs.org/doi/10.1287/orms.2023.02.02/full/>

“Designing AI Algorithms to Make Fair Decisions in Auctions, Pricing, and Marketing.” Columbia News. March 28, 2022.

<https://www.engineering.columbia.edu/news/nsf-amazon-grant-fairness-ai-business>

“Automatically Better: How algorithms became a top business asset.” Columbia Engineering Magazine. June 16, 2021.

<https://magazine.engineering.columbia.edu/focus/ai/fintech-and-business-analytics>

“COVID & Elevators: A Dangerous Mix, But Here’s How to Make It Safer.” U.S. News. February 17, 2021.

[https://www.usnews.com/news/health-news/articles/2021-02-17/](https://www.usnews.com/news/health-news/articles/2021-02-17/covid-elevators-a-dangerous-mix-but-heres-how-to-make-it-safer)

[covid-elevators-a-dangerous-mix-but-heres-how-to-make-it-safer](#)

“Sharing Elevators During COVID.” NewsWise. February 9, 2021.

www.newswise.com/coronavirus/sharing-elevators-during-covid

“Elevators could be a barrier to offices reopening.” ConsumerAffairs. February 9, 2021.

www.consumeraffairs.com/news/

[coronavirus-update-case-numbers-move-in-the-right-direction-who-looks-for-the-virus-source-020921.html](#)

“Columbia data scientist designs better e-commerce systems.” EurekAlert!. July 20, 2020.

www.eurekalert.org/pub_releases/2020-07/dsia-cds072020.php

“Loot boxes are a matter of ‘life or death’ for problem gamblers, says researcher.” PC Gamer. August 9, 2019.

www.pcgamer.com/loot-boxes-are-a-matter-of-life-or-death-for-problem-gamblers-says-researcher/

“Loot boxes a matter of ‘life or death,’ says researcher.” Games Industry. August 8, 2019.

www.gamesindustry.biz/articles/2019-08-08-loot-boxes-a-matter-of-life-or-death

“Your Holiday Impulses are the Stuff of On-Demand Logistical Nightmares.” Wired. July 1, 2017.

www.wired.com/story/inside-the-black-magic-of-on-demand-holiday-delivery/

“10 Cornell alumni, 2 students make Forbes’ ‘30 Under 30’ list.” The Ithaca Voice. January 20, 2016.

<https://ithacavoice.com/2016/01/9-cornell-alumni-2-students-make-forbes-30-under-30-list/>

“Integrating Supply Costs and Sales to Maximize Profits.” Columbia News. January 7, 2016.

<https://www.engineering.columbia.edu/news/>

[adam-elmachtoub-integrating-supply-costs-and-sales-maximize-profits](#)

"25 from MIT named to Forbes 30 Under 30 lists in 2016." The MIT Tech. January 7, 2016.
<http://news.mit.edu/2016/forbes-30-under-30-lists-0107>

"IEOR researchers investigate how retailers can employ opaque products to reduce costs." Columbia Spectator. November 24, 2015.
www.columbiaspectator.com/news/2015/11/12/ieor-professor/

PERSONAL

Citizenship: USA and Lebanon

Languages: English, Arabic (fluent), Spanish (beginner)

Hobbies: Basketball, backgammon, soccer, stand-up comedy