Yehua Wei

Academic Employment

Fuqua School of Business, Duke University, Durham, NC

Professor in Decision Sciences — **July 2026 –**

Associate Professor in Decision Sciences (tenured in 2022) — **July 2019 – June 2026**

Carroll School of Management, Boston College, Chestnut Hill, MA

Assistant Professor in Operations Management — **August 2016 – June 2019**

Fuqua School of Business, Duke University, Durham, NC

Assistant Professor in Decision Sciences — **July 2013 – July 2016**

Education

Massachusetts Institute of Technology, Cambridge, MA

Sloan School of Management – Operations Research Center

Ph.D in Operations Research — **September 2008 – June 2013**

- Thesis Title: Effectiveness and Design of Sparse Process Flexibilities
- Advisor: David Simchi-Levi

University of Waterloo, Waterloo, Ontario, Canada

Faculty of Mathematics

Bachelor of Mathematics — **September 2004 - June 2008**

- Majors: Pure Math, Combinatorics & Optimization (Double Majors)
- Graduated on Dean's Honours List, with distinction.

Publications

1. "Constant Regret Primal-Dual Policy for Multi-way Dynamic Matching" (Y. Wei, J. Xu, and S. Yu), *Management Science*, forthcoming.

   Conference version accepted in *ACM-SIGMETRICS*, 2023.

2. "Online Demand Fulfillment Problem with Initial Inventory Placement: A Regret Analysis" (A. Arlotto, I. Keskin, and Y. Wei), *Operations Research*, 2026.

   Finalist of 2024 POMS College of Supply Chain Management Best Student Paper Competition. Entrant: I. Keskin

3. "Multi-Item Order Fulfillment Revisited: LP Formulation and Prophet Inequality" (A. Amil, A. Makhdoumi, and Y. Wei), *Management Science*, 2025.

   Conference version accepted in *ACM Conference on Economics and Computation (EC)*, 2023.

Finalist of RMP Jeff McGill Student Paper Prize (2022). Entrant: A. Amil

4. "Bounded Rationality in Service Networks with Open Routing" (A. Frazelle, T. Huang, and Y. Wei). *Production and Operations Management*, 2024.

5. "Approximate Submodularity in Network Design Problems" (L. DeValve, A. Pekec, and Y. Wei), *Operations Research*, 71(4):1021-1039, 2023.

6. "Assemble-to-Order Systems" (L. DeValve, J. Song, and Y. Wei), book chapter in Research Handbook on Inventory Management, 2023

7. "Understanding the Value of Fulfillment Flexibility in an Online Retailing Environment" (L. DeValve, Y. Wei, D. Wu, and R. Yuan), *Manufacturing & Service Operations Management*, 25(2):391-408, 2023.

   Finalist in 2019 M&SOM Practice-based Research Competition.

8. "A New Approach for Vehicle Routing with Stochastic Demand: Combining Route Assignment with Process Flexibility" (K. Ledvina, H. Qin, D. Simchi-Levi, and Y. Wei), *Operations Research* , 70(5), pp. 2655-2673, 2022.

   Winner of 2023 TSL Intelligent Transportation Systems SIG Paper Award

9. "A Primal-Dual Approach to Analyzing ATO Systems" (L. DeValve, A. Pekec, and Y. Wei), *Management Science*, 66(11), pp. 5389-5407, 2020.

10. "Process Flexibility for Multi-Period Production Systems" (C. Shi, Y. Wei, and Y. Zhong), *Operations Research*, 67(5), 1300-1320, 2019.

11. "Constraint Generation for Two-Stage Robust Network Flow Problem" (D. Simchi-Levi, H. Wang, and Y. Wei), *INFORMS Journal on Optimization*, 1(1), 49-70, 2019.

12. "Increasing Supply Chain Robustness through Process Flexibility and Inventory" (D. Simchi-Levi, H. Wang, and Y. Wei), *Production and Operations Management*, 27(8), 1476-1491, 2018.

    Second place winner in 2013 CSAMSE Best Paper Award.

13. "Strategic Open Routing in Service Networks" (A. Arlotto, A. Frazelle, and Y. Wei), *Management Science*, 65 (2), 735-750, 2019.

    Finalist in 2016 M&SOM Student Paper Competition. Entrant: A. Frazelle.

14. "A $O(\log n)$-optimal policy for the online selection of a monotone subsequence from a random sample" (A. Arlotto, Y. Wei, and X. Xie), *Random Structures & Algorithms*, 52(1), pp. 41-53, 2018.

15. "Analyzing Process Flexibility: A Distribution-free Approach with Partial Expectations" (H. Bidkhori, D. Simchi-Levi, and Y. Wei), *Operations Research Letters*, 44(3), pp. 291-296, 2016.

16. "Sparse Process Flexibility Designs: Is Long Chain Really Optimal?" (A. Desir, V. Goyal, Y. Wei, and J. Zhang), *Operations Research*, 64(2), pp.416-431, 2016.

    Finalist in 2014 George Nicholson Student Paper Competition and 2014 MSOM Student Paper Competition. Entrant: A. Desir.

17. "Identifying Risks and Mitigating Disruptions in the Automotive Supply Chain" (D. Simchi-Levi, W. Schmidt, Y.Wei, P. Zhang, K. Combs, Y. Ge, O. Gusikhin, M. Sander, and D. Zhang), *Interfaces*, 45(5), pp. 375-390, 2015.

    2014 Daniel H. Wagner Prize for Excellence in Operations Research Practice.

18. "Worst-case Analysis of Process Flexibility Designs" (D. Simchi-Levi and Y. Wei), *Operations Research*, 63(1), pp. 166-185, 2015.

19. "From Superstorms to Factory Fires: Managing Unpredictable Supply-Chain Disruptions" (D. Simchi-Levi, W. Schmidt, and Y. Wei), *Harvard Business Review*, 92(1-2), 2014.

20. "Understanding the Performance of the Long Chain and Sparse Designs in Process Flexibility" (D. Simchi-Levi and Y. Wei), *Operations Research*, 60(5), pp. 1125-1141, 2012.

    Second place winner in 2011 George Nicholson Student Paper Competition.

21. "Belief Propagation for Min-cost Network Flow: Convergence and Correctness" (D. Gamarnik, D. Shah, and Y. Wei), *Operations Research*, 60(2), pp. 410-428, 2012.

    Conference version appeared in Proceedings of *ACM-SIAM Symposium on Discrete Algorithms*, 2010.

22. "A Criterion for the Half-plane Property" (D. Wagner and Y. Wei), *Discrete Mathematics* 309(3-4), pp. 1385-1390, 2009.

Selected Working Papers

23. "Managing Advanced Reservations of Reusable Resources with Continuous Arrivals and Discrete Usage" (Y. Kuo, C. Shi and Y.Wei)

    Conference version accepted in 2026 EC.

24. "Online Resource Allocation without Re-solving: The Effectiveness of Primal-Dual Policies" (S. He, Y. Wei, J. Xu, and S. Yu).

25. "Optimality of Random Regular Graphs in Sparse Network Designs" (W. Li, X. Niu, Y. Wei, and J. Xu).

    Conference version accepted in 2026 EC.

26. "Online Pandora's Box for Contextual LLM Cascading" (A. Belloni, Y.. Chen, and Y. Wei).

Invited Seminars

- 2026 INFORMS Simulation Society Research Workshop, NC State University, August 2026
- Tsinghua University, School of Economics and Management, March 2026
- Seoul National University, College of Business School, March 2026
- University of Washington, Foster School of Business, March 2026
- The University of North Carolina at Chapel Hill, Statistics & Operations Research, November 2025
- University of Chicago, Booth School of Business, October 2025
- Workshop on Online Platforms and Matching Markets, Booth School of Business, August 2025

- Univeristy of Toronto, Rotman School of Management, June 2025
- Amazon Logistics Lecture Series, March 2024
- University of Southern California, Marshall School of Business, March 2024
- The Chinese University of Hong Kong, Business School, December 2023
- University of Rochester, Simon Business School, October 2022
- University of Chicago Workshop on E-Commerce and Logistics, Booth School of Business, August 2022
- Georgetown University, McDonough School of Business, February 2022
- National University of Singapore, NUS Business School, February 2022
- Amazon, Modeling and Optimization (MOP) group, February 2022
- University of Maryland, Robert H. Smith School of Business, April 2021
- McGill University, Desautels Faculty of Management, October 2020
- Georgia Tech, H. Milton Stewart School of Industrial and Systems Engineering, October 2020
- The Hong Kong University of Science and Technology, Business School, July 2019
- Central South University, Business School, June 2019
- Hunan University, College of Economics and Trade June 2019
- Duke University, Fuqua School of Business, December 2018
- JD.com, San Francisco, CA, July 2018
- University of Michigan, Ross School of Business, April 2018
- University of Toronto, Rotman School of Management, February 2018
- Columbia University, Industrial Engineering and Operations Research department and the Decision, Risk & Operations Division at Columbia Business School, December 2017
- Mostly OM Workshop at Tsinghua University, May 2017
- Sun Yat-sen University, Department of Business Management at Lingnan College, May 2017
- Boston College, Carroll School of Management, the Bartunek Faculty Research Forum, February 2017
- University of Illinois at Urbana-Champaign, Industrial and Enterprise Systems Engineering, November 2016
- Boston University, Questrom School of Business, March 2016
- Duke University, Fuqua School of Business, January 2016
- Boston College, Carroll School of Management, January 2016
- North Carolina State University, Industrial and System Engineering, January 2016
- University of British Columbia, Sauder School of Business, October 2015
- Tsinghua University, School of Economics and Management, May 2015
- The Chinese University of Hong Kong, Business School, April 2015
- City University of Hong Kong, Department of Management Sciences, April 2015
- South China University of Technology, School of Business Administration, April 2015
- Shanghai Jiao Tong University, Antai College of Economics and Management, April, 2015

- SAS Institute, Operations Research Department, December, 2014
- University of Chicago, Booth School of Business, November, 2014
- National University of Singapore, NUS Business School, April, 2013
- Columbia University, Columbia Business School, February, 2013
- Cornell University, School of Operations Research and Information Engineering, February, 2013
- New York University, Stern School of Business, February 2013
- University of Southern California, Marshall School of Business, February 2013
- Duke University, Fuqua School of Business, January, 2013
- UNC Chapel Hill, Kenan-Flagler Business School, January, 2013
- UT Austin, McCombs School of Business, January, 2013
- Stanford University, Management Science and Engineering, January 2013
- UC Irvine, Paul Merage School of Business, January 2013
- University of Rochester, Simon Graduate School of Business, January 2013
- University of Waterloo, Department of Management Science, December 2012

Selected Conferences Presentations

Optimality of Random Regular Graphs in Sparse Network Designs

- ACM Conference on Economics and Computation (EC), July 2026

Managing Advanced Reservations of Reusable Resources with Continuous Arrivals and Discrete Usage

- ACM Conference on Economics and Computation (EC), July 2026

Primal-Dual Algorithm for Online Resource Allocation without Resolving

- INFORMS Applied Probability Conference, July 2025
- INFORMS Annual Meeting, November 2024

Multi-Item Order Fulfillment Revisited: LP Formulation and Prophet Inequality

- ACM Conference on Economics and Computation (EC), July 2023

Constant Regret Primal-Dual Policy for Multi-way Dynamic Matching

- INFORMS Annual Meeting, October 2022

Managing Online Fulfillment Systems

- INFORMS Annual Meeting, October 2021

A New Approach for Vehicle Routing with Stochastic Demand: Combining Route Assignment with Process Flexibility

- CORS Annual Conference, June 2021

Reinforcement Learning For Flexibility Design Problems

- INFORMS Annual Meeting, November 2020

A Primal-Dual Approach to Analyzing ATO Systems

- INFORMS Annual Meeting, Phoenix, AZ, November 2019

Analyzing Policies in Dynamic Robust Optimization

- BIRS Workshop on Models and Algorithms for Sequential Decision Problems under Uncertainty, Banff, AB, Canada, January, 2019

Understanding the Value of Fulfillment Flexibility in an Online Retailing Environment

- INFORMS Annual Meeting, Phoenix, AZ, November 2018
- MSOM, Singapore, July 2019
- CORS Annual Conference, June 2021

Constraint Generation for Two-Stage Robust Network Flow Problem

- INFORMS Annual Meeting, Houston, TX, October 2017

Tutorial: Process Flexibility: Theoretical Performance of Sparse Designs

- International Conference, Waikoloa Village, Hawaii, USA, June 2016

Process Flexibility for Multi-Period Production Systems

- INFORMS Applied Probability Conference, Istanbul, Turkey, July 2015
- INFORMS Annual Meeting, Philadelphia, PA, October 2015

Retailing with Opaque Products

- INFORMS International Conference, Waikoloa Village, Hawaii, USA, June 2016
- Production and Operations Management Society (POMS) Annual Conference, Atlanta, Georgia, USA, May 2014

Worst-case Analysis of Process Flexibility Designs

- Manufacturing & Service Operations Management (MSOM) Conference, INSEAD, France, July 2013

Increasing Supply Chain Robustness Through Process Flexibility and Inventory

- 22nd International Symposium on Mathematical Programming (ISMP), Pittsburgh, Pennsylvania, July 2015
- Production and Operations Management Society (POMS) Annual Conference, Washington DC, May 2015
- INFORMS Annual Meeting, San Francisco, CA, October 2014

- The Chinese scholars Association for Management Science and Engineering (CSAMSE), Beijing, China, July 2013

Understanding the Effectiveness of Sparse Flexibilities

- INFORMS Annual Meeting, Phoenix, AZ, October 2012
- 21st International Symposium on Mathematical Programming (ISMP), Berlin, Germany, August 2012
- Manufacturing & Service Operations Management (MSOM) Conference, New York, NY, USA, June 2012
- INFORMS Annual Meeting, Charlotte, NC, November 2011

Belief Propagation for Min-cost Network Flow: Convergence and Correctness

- ACM-SIAM Symposium on Discrete Algorithms (SODA), Austin, TX, USA, January 2010
- LIDS Student Conference, Cambridge, MA, USA, January 2010
- Applied Probability Society Conference, Ithaca, NY, USA, July 2009

Editorial Activities

Associate editor for *Operations Research*, 2023 -

Associate editor for *Management Science*, 2017 -

Reviewer for *Operations Research*, *Management Science*, *Manufacturing & Service Operations Management*, *Mathematics of Operations Research*, *INFORMS Journal on Optimization*, *Production & Operations Management*, *Stochastic Systems*, *Naval Research Logistics*, *Operations Research Letters*, *IIE Transactions*, *Annals of Operations Research*, *SIAM Journal on Discrete Mathematics*, *IEEE Transactions on Automation Science and Engineering*, *International Journal of Production Research*, *Flexible Services and Manufacturing*, *Journal of Graph Algorithms and Applications*

Selected Academic Honors and Awards

2023 Transportation Science and Logistics Intelligent Transportation Systems SIG Paper Award

2023 Award for Innovation and Excellence in Teaching for the MQM Core

2019 MSOM Service SIG Best Paper Award

2019 MSOM Practice Based Research Competition (Finalist)

2015 Engineering Excellence Award @ Ford Research & Advanced Engineering

2014 Daniel H. Wagner Prize for Excellence in Operations Research Practice

2013 CSAMSE Best Paper Award (2nd place winner)

2011 George Nicholson Student Paper Competition (2nd place winner)

NSERC Postgraduate Scholarship (PGS-M and PGS-D), 2008-2012

W.T. Tutte Rene Descartes National Scholarship 2004-2008

Ph.D. Students Advised

Andrew Frazelle, 2018, co-advised with Alessandro Arlotto,
First Placement: assistant professor at Naveen Jindal School of Management, The University of Texas at Dallas

Levi Devalve, 2019, role: co-advised with Saša Pekeč,
First Placement: assistant professor at Booth School of Business, University of Chicago

Shuyu Chen, 2022, role: co-advised with Jeannette Song
First Placement: American Airlines

Sophie Yu, 2023, co-advised with Jiaming Xu
First Placement: assistant professor at Wharton School, University of Pennsylvania

Ayoub Amil, 2024, co-advised with Ali Makhdoumi
First Placement: LinkedIn

Ph.D. Dissertation Committees

Kai Wang, 2014, first placement: EA Sports

Xinchang Xie, 2020, first placement: post-doc at Cornell Tech

Yeqing Zhou, 2021, first placement: assistant professor at Industrial Engineering and Innovation Sciences, Eindhoven University of Technology

Yuexing Li, 2022, first placement: assistant professor at Johns Hopkins Carey Business School

Jingwei Zhang, 2022, first placement: assistant professor at School of Data Science, Chinese University of Hong Kong, Shenzhen

Yuan Guo, 2023, first placement: assistant professor at the George Washington University School of Business

Hanjing Zhu, 2023, first placement: Amazon

Ali Kaan Tuna, 2024, first placement: assistant professor at Tilburg University School of Economics and Management

Jingyi (Cleo) Yan, 2025, first placement: Boston Consulting Group

Selected Academic Services

President for INFORMS North Carolina Chapter: 2026

Organizer for the 2025 BIRS Workshop on "Dynamic Allocation and Matching"

Vice President for INFORMS North Carolina Chapter: 2025

Judge for JFIG Paper Competition: 2023-2025

Judge for MSOM Student Paper Competition: 2017-2026

Judge for George Nicholson Student Paper Competition: 2019, 2020, 2022, 2023

Judge for CSAMSE Best Paper Competition: 2018, 2022

Session chair for the Applied Probability Society cluster at 2021 INFORMS Annual Meeting

Cluster chair for the Supply Chain cluster at 2020 INFORMS Annual Meeting

Session chair for the Supply Chain cluster at 2020 INFORMS Annual Meeting

Referee for MSOM Supply Chain Management SIG 2020 Conference

Referee for MSOM Service SIG 2019 Conference

Judge for 2018 CSAMSE Best Paper Competition

Referee for MSOM Supply Chain Management SIG 2018 Conference

Referee for MSOM Service SIG 2018 Conference

Session chair for the Inventory track at 2018 POMS Annual Meeting

Session chair for 2017 INFORMS Annual Meeting

Session chair for the INFORMS Applied Probability Society Conference 2017

Cluster chair for the MSOM Service Operations cluster at 2017 INFORMS Annual Meeting

Session chair for the Applied Probability cluster at 2016 INFORMS Annual Meeting

Session chair for the Inventory track at 2016 INFORMS International Conference

Session chair for the Inventory track at 2015 POMS Annual Meeting

Member of the Fuqua Decision Sciences Ph.D. Admission Committee, 2014-2015

Member of the Fuqua Decision Sciences Ph.D. Program Progress Committee, 2014-2015

Session chair for the Applied Probability cluster at 2014 INFORMS Annual Meeting

Session chair at 2013 INFORMS Annual Meeting

Session chair at 2012 INFORMS Annual Meeting

University Services

Decision Sciences Ph.D. Coordinator, 2026 -

Fuqua Special Program Review Committee, 2024

Fuqua Dean Search Committee, 2023-2024

Curriculum Committee, 2022-2024 (served as the chair in 2023-2024)

Decision Sciences Faculty Recruiting Committee, 2022-2025 (served as the chair in 24-25)

Decision Sciences Ph.D. Admission Committee, 2020-2022

Decision Sciences seminars coordinator, 2019-2021

Duke University

Faculty lead for Data+ project "Optimizing Hospital Scheduling Through Machine Learning ," Rhodes Information Initiative, Duke University, 2023

Faculty sponsor for Data+ project "Smart(er) Routing at Theme Parks," Information Initiative at Duke University, 2016

Funding Grants

JD.com, Inc., Gift Fund, amount: $25,000, 2018-2019.

Courses Taught At Duke Univeristy

- Decision analytics and Modeling (master-level course), 2023-2027

2023 Award for Innovation and Excellence in Teaching for core courses

- Advanced Data Analytics and Applications (master-level course), 2023-2026
- Spreadsheet modeling and decision analysis (master-level course), 2013-2015, 2022
- Decision Models (master-level course), 2021
- Convex Optimization (phd-level course), 2023, 2024, 2026
- Dynamic Programming (phd-level course), 2020, 2022
- Probability & Statistics (master-level course), 2019

Courses Taught At Boston College

- Business Statistics (undergraduate-level course), 2016-2018