Sébastien Martin, Associate Professor

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Last Updated: 2025-02

SUMMARY

I am an associate professor of Operations at the Kellogg School of Management, Northwestern University. My research focuses on the interface of large-scale optimization and operations management, with applications to transportation, the gig economy, public sector operations and AI.

EDUCATION

Massachusetts Institute of Technology | Cambridge, MA, USA 2014 — 2019
Ph.D. - Operations Research

Ecole Polytechnique | Palaiseau, France 2011 — 2015
B.Sc. & M.Sc. - Applied Mathematics

WORK

Northwestern University - Kellogg | Evanston, IL, USA 2020 — 2025-09
Assistant Professor of Operations
I taught the Operations Management core course in the MBA program.

Northwestern University - Kellogg | Evanston, IL, USA 2025-09 — Current
Associate Professor of Operations
I teach the Operations Management core course in the MBA program.

ESAB Corporation | North Bethesda, Maryland, U.S. 2025 — Current
AI advisor to the CEO
ESAB is a global leader in welding and cutting products. I advise the CEO on the use of AI to improve the company's operations.

Lyft, Inc. | New York City, NY, USA 2019 — 2020
Postdoctoral Fellow
I worked with the Marketplace Innovation Lab to improve dispatch algorithms.

Google | Mountain View, CA, USA 2016-06 — 2016-08
Software Engineering Intern
Successfully passed the Google Software Engineer coding interviews. Worked for Google Maps. Researched, experimented and implemented novel algorithms to improve maps and navigation data using large geolocation datasets (> 100Gb).

UC Berkeley | Berkeley, CA, USA 2014-04 — 2014-08
Visiting Researcher

PUBLICATIONS

*Only publicly available papers, in decreasing order of latest update. The current publication status is highlighted in **bold**.*

[22] Algorithmic Precision and Human Decision: A Study of Interactive Optimization for School Schedules | A. Delarue, Z. Lian, S. Martin
Management Science 2025
Accepted in EC 2024, semi-finalist if the 2024 Wagner Prize.

[21] The Trap of Complexity in Experimentation | Y. Huang, S. Martin, Z. Qin
Submitted to Management Science 2025

[20] Labor Cost Free-Riding in the Gig Economy | Z. Lian, S. Martin, G. van Ryzin
Major revision, Management Science 2025
INFORMS RMP (Revenue Management and Pricing) Student Paper Award Finalist, 2021

[19] Trading Flexibility for adoption: Dynamic versus static walking in ridesharing | J. Yan, S. Martin, S. Taylor
Management Science 2025

[18] Detours in Shared Rides | I. Lobel, S. Martin
Management Science 2025

[17] Two-Sided Flexibility in Platforms | D. Freund, S. Martin, J. (K.) Zhao
Submitted to Operations Research 2024
MIT ORC Best Student Paper Award, 2024

[16] Human-AI Interactions and Societal Pitfalls | F. Castro, J. Gao, S. Martin
Working Paper (to be submitted to Operations Research) 2024
Accepted in EC 2024. Featured in the Wall Street Journal & MIT Technology Review.

[15] Dual-sourcing of capacity | S. Chopra, P. Mishra, K. Smilowitz
Submitted to MSOM 2024

[14] Relative Monte Carlo for Reinforcement Learning | A. Bazerghi, S. Martin, G. van Ryzin
Working Paper 2024

[13] Value of Sharing in Robots-as-a-Service Operations | A. Jacquillat, S. Martin, K. Zhang
To be resubmitted to Management Science 2024

[12] Employees versus Contractors: An Operational Perspective. | I. Lobel, S. Martin, H. Song
Manufacturing & Service Operations Management (Frontiers in Operations) 2024

[11] Autonomous Vehicles in Ride-Hailing and the Threat of Spatial Inequalities | F. Castro, J. Gao, S. Martin
Working Paper 2024

[10] A Better Match for Everyone: Reinforcement Learning at Lyft | S. Martin and 10+ Lyft collaborators
INFORMS Journal on Applied Analytics 2024
2023 Franz Edelman Award Laureate

[9] Supply Prioritization in Hybrid Marketplaces | F. Castro, J. Gao, S. Martin
Working Paper 2022

[8] Real-Time Rideshare Driver Supply Values using Online Reinforcement Learning | B.Han, H. Lee, S. Martin
KDD 2022 (Machine Learning Conference) 2022

[7] Solving the ride-sharing productivity paradox: Priority dispatch and optimal priority sets | V. Krishnan, R. Iglesias, S. Martin, V. Pattabhiraman, S. Wang, G. van Ryzin
INFORMS Journal on Applied Analytics 2022
Daniel H. Wagner Prize Finalist, 2022

[6] Bus Routing Optimization Helps Boston Public Schools Design Better Policies | D. Bertsimas, A. Delarue, W. Eger, J. Hanlon, S. Martin
INFORMS Journal on Applied Analytics 2020
2019 Franz Edelman Award Laureate

[5] Optimizing schools' start time and bus routes | D. Bertsimas, A. Delarue, S. Martin
Proceedings of the National Academy of Science 2019
Featured in the Wall Street Journal and the Boston Globe. MIT ORC Best Student Paper Award, 2018. Doing Good with Good OR INFORMS award, Second Place, 2019.

[4] The Price of Interpretability | D. Bertsimas, A. Delarue, P. Jaillet, S. Martin
arXiv 2019

[3] Travel Time Estimation in the Age of Big Data | D. Bertsimas, A. Delarue, P. Jaillet, S. Martin
Operations Research 2019

[2] Online Vehicle Routing: The Edge of Optimization in Large-Scale Applications | D. Bertsimas, P. Jaillet, S. Martin
Operations Research 2019
Best Presentation (2018 LIDS conference)

[1] Creating complex congestion patterns via multi-objective optimal freeway traffic control with application to cyber-security | J. Reilly, M. Payer, A. Bayen
Transportation Research Part B 2016

RECOGNITIONS

INFORMS Journal on Computing Meritorious Reviewer Award | INFORMS 2025
For my service as a reviewer for INFORMS Journal on Computing.

Chair Core Course Teaching Award | Kellogg School of Management, Northwestern University
For "teaching excellence" in Kellogg's core course Operations Management 2024

Transportation Science Meritorious Service Award | INFORMS TSL Society 2024
For my service as a reviewer for the journal Transportation Science.

Best Student Paper Award | MIT ORC 2024
For my paper "Two-Sided Flexibility in Platforms", the student is my co-author Kamessi Zhao.

Franz Edelman Award Laureate (with Lyft) | INFORMS 2023
Most important award for applied operations research, for my work on reinforcement learning with Lyft.

Daniel H. Wagner Prize Finalist | INFORMS 2022
Award for "strong mathematics applied to practical problems", for my work on platform equilibrium optimization with Lyft.

RMP Student Paper Award Finalist | INFORMS 2021
Award for the best student paper in revenue management and pricing for my paper on labor cost free-riding in the gig economy. The student was Zhen Lian.

George B. Dantzig Dissertation Award | INFORMS 2019
For my PhD dissertation. The George B. Dantzig Award is given for the best dissertation in any area of operations research and the management sciences that is innovative and relevant to practice.

TSL dissertation prize | INFORMS Transportation Science and Logistics Society 2019
For my PhD dissertation. Oldest dissertation INFORMS prize, in the general area of transportation science and logistics.

Franz Edelman Award Laureate (with Boston Public Schools) | INFORMS 2019
Most important award for applied operations research, for my work on bus routing optimization with Boston Public Schools.

Doing Good with Good OR award, Second Place | INFORMS 2019
For my paper "optimizing schools' start time and bus routes".

Best Student Paper Award | MIT ORC 2018
For my paper "optimizing schools' start time and bus routes".

Best Presentation | LIDS 2018
For my paper "Online Vehicle Routing: The Edge of Optimization in Large-Scale Applications".

Boston Public Schools Transportation Challenge Winner | Boston Public Schools 2017
Winner of a $30,000 contest to optimize school bus routes and school schedules.

Zodiac Aerospace – Gerondeau Innovation Prize | Zodiac Aerospace & Ecole Polytechnique
Won a €10,000 prize for most innovative start-up, using machine learning to build a smart bicycle that automatically shifts gears. 2013

French Medal of National Defense, Bronze level | France 2012
I received this French military honor for my cumulated time in external operations during my year of service as a military firefighter.

LANGUAGES English *(Fluent)* , French *(Native speaker)* , Spanish *(Intermediate)*