ARTHUR DELARUE

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EXPERIENCE

Georgia Institute of Technology, Stewart School of Industrial and Systems Engineering, Atlanta, GA
- Gary C. Butler Faculty Fellow — 2024 – 2025
- Assistant Professor — 2022 – Present

Lyft, Inc, Cambridge, MA
- Postdoctoral Fellow — 2021 – 2022

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA
- Ph.D. Operations Research — 2021
- S.B. Physics and Mathematics — 2016

RESEARCH INTERESTS

Optimization and machine learning in marketplaces, experiments, transportation, public sector.

PUBLICATIONS

1. Simple Imputation Rules for Prediction with Missing Data: Theoretical Guarantees vs. Empirical Performance (with D. Bertsimas, J. Pauphilet). **Transactions on Machine Learning Research** (2024).
2. Reducing Marketplace Interference Bias Via Shadow Prices (with I. Bright, I. Lobel). Forthcoming in **Management Science** (2024).
    - Early version accepted to ACM Conference on Economics and Computation (2023).
3. Policy Analytics in Public School Operations (with D. Bertsimas). **Operations Research** 71(1):289-313 (2023).
4. Course Scheduling Under Sudden Scarcity: Applications to Pandemic Planning (with C. Barnhart, D. Bertsimas, J. Yan). **Manufacturing & Service Operations Management** 24(2):727-745 (2022).
5. From Predictions to Prescriptions: A Data-Driven Response to COVID-19 (with D. Bertsimas et al.). **Health Care Management Science** 24, 253-272 (2021).
6. Reinforcement Learning with Combinatorial Actions: Application to Vehicle Routing (with R. Anderson, C. Tjandraatmadja). In **Advances in Neural Information Processing Systems** (2020).
7. Bus Routing Optimization Helps Boston Public Schools Design Better Policies (with D. Bertsimas, W. Eger, J. Hanlon, S. Martin). **INFORMS Journal of Applied Analytics** 50(1): 39-47 (2020).
8. Optimizing Schools' Start Time and Bus Routes (with D. Bertsimas, S. Martin). **Proceedings of the National Academy of Sciences** 116(13): 5943-5948 (2019).
9. Travel Time Estimation in the Age of Big Data (with D. Bertsimas, P. Jaillet, S. Martin). **Operations Research** 67(2): 498-515 (2019).

COMPLETED WORK

10. Algorithmic Precision and Human Decision: A Study of Interactive Optimization for School Schedules (with Z. Lian, S. Martin). Revise & Resubmit at **Management Science** (2023).
    - Early versions accepted to MSOM Sustainable Operations SIG (2023), ACM Conference on Economics and Computation (2024).
11. Adaptive Optimization for Prediction with Missing Data (with D. Bertsimas, J. Pauphilet). Submitted (2024).
12. Solving the Quadratic Assignment Problem using Deep Reinforcement Learning (with P.S. Bagga). arXiv: 2310.01604
13. The Price of Interpretability (with D. Bertsimas, P. Jaillet, S. Martin). arXiv: 1907.03419.

AWARDS AND HONORS

Research

INFORMS Wagner Prize (Semi-Finalist)	2024
INFORMS Data Mining Section Best Paper (Finalist)	2021
Pierskalla Award, INFORMS Health Applications Society (Winner)	2020
INFORMS Data Mining Section Best Student Paper (Finalist)	2019
INFORMS Franz Edelman Laureate	2019
MIT LIDS Student Conference Best Presentation (Runner-up)	2019
INFORMS Doing Good With Good OR Competition (Runner-up)	2018
MIT Operations Research Center Best Student Paper (Winner)	2018
Boston Public Schools Transportation Challenge (Winner)	2017
William Asbjornsen Albert Memorial Fellowship	2016
Zeno Karl Schindler Foundation Research Grant	2014
Third prize in Latin, Concours Général des Lycées[1]	2011

Teaching

Georgia Tech Student Recognition of Excellence in Teaching: CIOS Honor Roll	2022, 2023

Service

Georgia Tech ISyE Diversity, Equity, and Inclusion Fellow	2023
MIT William L Stewart Jr. Award	2020

Advisee awards

Olivia Phillips: Gary C. Butler PhD Fellowship	2024
Kleanthis Karakolios: Onassis Foundation Fellowship	2023

TEACHING EXPERIENCE

Georgia Institute of Technology, Instructor

ISYE 6673 Financial Optimization (Master of Finance elective)	Fall 2022, 2023, 2024
ISYE 3133 Engineering Optimization (undergraduate core)	Spring 2023

MIT Sloan School of Management

15.083 Integer Optimization (PhD elective, TA)	Spring 2021
15.071 The Analytics Edge (MBA elective, TA)	Spring 2018
15.S60 Computing in Optimization and Statistics (Head Instructor)	Winter 2019, 2020, 2021

[1] National competition for French high schools across all subjects.

15.S41 Software Tools for Business Analytics (Session Instructor) Winter 2018, 2020

Guest Lectures

IEOR E4418 Transportation Analytics and Logistics (Columbia IEOR) Spring 2022
API 504 Policy Analysis for Transnational Affairs (Harvard Kennedy School) Spring 2021
MN 4480 Supply Chain Management (Naval Postgraduate School) Winter 2021
15.060 Data, Models, and Decisions (MIT Sloan) Fall 2020
15.053 Optimization Methods in Business Analytics (MIT Sloan) Spring 2019, 2020, 2021
15.071 The Analytics Edge (MIT Sloan) Spring 2018, Fall 2019, Spring 2019

ADVISING

Olivia Phillips, PhD student in Operations Research Fall 2023 – Present
Weiqing (Lynn) Xu, PhD student in Operations Research Spring 2023 – Present
Kleanthis Karakolios, PhD student in Machine Learning Fall 2022 – Present
Puneet S. Bagga, Undergraduate student in Computer Science Fall 2022 – Present

SERVICE

INFORMS

Committee Member, Transportation Science & Logistics Best Paper Prize 2024
Co-chair, INFORMS Future of OR and Analytics Workshop, Indianapolis, IN 2022
Session chair, INFORMS Annual Meeting 2020 – 2022, 2024

Georgia Institute of Technology

Member, ISyE Graduate Admissions Committee 2022 – Present

Massachusetts Institute of Technology

Graduate Resident Advisor, Simmons Hall 2018 – 2021
Member, Operations Research Center Resources for Easing Friction and Stress (REFS) 2017 – 2021

Reviewer for major journals, including *Management Science*, *Operations Research, Manufacturing & Service Operations Management, Transportation Science, Naval Research Logistics, Transportation Research Part C: Emerging Technologies, Service Science, Socio-Economic Planning Sciences, IEEE Transactions on Pattern Analysis and Machine Intelligence.*

INDUSTRY EXPERIENCE

Lyft, Inc, Cambridge, MA
Postdoctoral Fellow 2021 – 2022

Google, Cambridge, MA
Research Intern 2019

Jane Street Capital, New York, NY
Trading Intern 2015

SELECTED INVITED TALKS

2024 MIT – Department of Economics – Blueprint Labs
HEC Paris – Information Systems & Operations Management
University of Cyprus – Business & Public Administration
2023 University of British Columbia – Sauder School of Business – Operations & Logistics

2022 Carnegie Mellon University – YinzOR Student Conference (Plenary)
2021 Lyft, Inc – Rideshare Labs
Cornell Johnson School of Management – Operations, Technology & Information Management
Columbia Business School – Decisions, Risk and Operations
Boston University – Questrom School of Business – Operations & Technology Management
UCLA – Anderson School of Management – Decisions, Operations & Technology Management
2020 Georgia Institute of Technology – Stewart School of Industrial and Systems Engineering
Naval Postgraduate School – Operations Research
Kellogg-Wharton Virtual Operations Management Workshop
2019 Center for Strategic and Budgetary Analysis – Data as a Resource Workshop
Google Research Cambridge
Cornell Tech – AI100 Prediction in Practice Workshop
2018 MIT – Sloan School of Management – Operations Research & Statistics
MIT – Special Seminar on Operations Research for Social Good

SKILLS AND INTERESTS

Languages: French (native), German (intermediate), Spanish (intermediate), Greek (beginner).
Software: Julia, R, C++, Python, Bash, Mathematica, Matlab, SQL.
Citizenship: USA, France

MEDIA

My work has been featured in *The Wall Street Journal*, *The Boston Globe, Wired, Popular Mechanics, Kellogg Insight*, and *WBUR (NPR Boston)*.