

ARTHUR DELARUE

Stewart School of Industrial and Systems Engineering
Georgia Institute of Technology
755 Ferst Drive NW, Atlanta, GA 30332

arthur.delarue@isye.gatech.edu
adelarue.github.io
+1 (617) 467-8954

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. 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).
2. Simple Imputation Rules for Prediction with Missing Data: Theoretical Guarantees vs.
Empirical Performance (with D. Bertsimas, J. Pauphilet). **Transactions on Machine Learning
Research** (2024).
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). Minor Revision at **Management Science** (2024).
 - 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). Major Revision at **Machine Learning** (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.

IN PREPARATION

14. Pricing Experiments in Matching Marketplaces under Interference: Designs and Estimators (with K. Karakolios). In preparation for **Management Science** (2024).
15. Heterogeneous Treatment Effects Under Marketplace Interference (with K. Karakolios).
16. Upfront Pricing and Competition in Marketplaces (with Z. Lian, T. Qin).
17. Designing Fair and Efficient School Transportation Eligibility Rules (with S. Martin, O. Phillips).
18. Fixed-Route or On-Demand: Integrated Operations for Modern Transit (with A. Jacquillat, S. Karam, J. Yan).
19. Data-Driven Police Staffing (with W. Xu).
20. Learning Knapsack Decision Rules using Permutation-Invariant Neural Architectures (with P.S. Bagga, J. Pauphilet).

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
---	------

¹ National competition for French high schools across all subjects.

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
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

Organizing committee member, Transportation Science & Logistics Early-Career Workshop	2025
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 OR Comprehensive Exam Committee	2024
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** London Business School – Management Science & Operations
INSEAD Paris – Technology & Operations Management
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, Python, C++, 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)*.

REFERENCES

Dimitris Bertsimas
MIT Sloan School of Management
dbertsim@mit.edu² - (617) 253-4223

Ilan Lobel
NYU Stern School of Management
ilobel@stern.nyu.edu - (212) 998-0846

Alexandre Jacquillat
MIT Sloan School of Management
alexjacq@mit.edu - (412) 715-4848

² Please also contact assistant Stephanie Tran (stran15@mit.edu) for letter requests.