

# ARTHUR DELARUE

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## EXPERIENCE

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**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

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

## RESEARCH INTERESTS

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

## PUBLICATIONS

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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

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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). 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

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### 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 <sup>1</sup>	2011

### Teaching

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

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### 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

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<sup>1</sup> 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

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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

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#### 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

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**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

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- 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

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**Languages:** French (native), German (intermediate), Spanish (intermediate), Greek (beginner).

**Software:** Julia, R, C++, Python, Bash, Mathematica, Matlab, SQL.

**Citizenship:** USA, France

## MEDIA

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