

Alexandria Schmid

Massachusetts Institute of Technology
Operations Research Center
77 Massachusetts Ave, Bldg E40-103
Cambridge, MA 02139

Email: aschmid@mit.edu
Website: <https://alexschmid3.github.io>
Citizenship: USA
Pronouns: she/her

EDUCATION

Massachusetts Institute of Technology
PhD in Operations Research
Advisor: Alexandre Jacquillat

Cambridge, MA
Aug. 2020 – Dec. 2025

Georgia Institute of Technology
B.S. Industrial & Systems Engineering

Atlanta, GA
Aug. 2012 – May 2016

RESEARCH AND INDUSTRY EXPERIENCE

• **Massachusetts Institute of Technology**
Graduate Research Assistant

Cambridge, MA
Sept. 2020 - Present

- Conducting research in large-scale optimization, with a focus in transportation and routing

• **Amazon Robotics**
Research Science Intern

North Reading, MA
May 2023 - Aug. 2023

- Developed a robust optimization model to schedule robots to deliver work to stations, with dependence between tasks and highly variable robot travel times
- Solved the model via an adversarial scenario generation algorithm, providing efficiency benefits of 10-20% over baseline heuristics
- Implemented the model and algorithm in a high-fidelity Java simulation for further study

• **The Home Depot**
Senior Analyst - Supply Chain Analytics

Atlanta, GA
May 2016 - Aug. 2020

- Built logic and strategy for a new in-house replenishment system to unify and replace existing supply chain management systems
- Designed new order aggregation logic to reduce inventory by \$70 million, primarily targeting slow-moving inventory
- Completed a comprehensive analysis of replenishment system usage and identified multiple company-wide inventory process issues that have since been addressed

• **Georgia Institute of Technology**
Undergraduate Research Assistant

Atlanta, GA
Aug. 2015 - May 2016

- Created an integer optimization model to automate class scheduling and instructor assignment for the School of Industrial and Systems Engineering

PUBLICATIONS

- C. Barnhart, A. Jacquillat, and A. Schmid, “Robotic warehousing operations: a learning-enhanced large-scale neighborhood search approach”. *INFORMS Journal on Optimization*.

WORKING PAPERS

- A. Jacquillat, A. Schmid and K. Wang, “Optimizing relay operations toward sustainable logistics”. Submitted.
- K. Cummings, A. Jacquillat, B. Martin-Idrissi, A. Schmid, “Deviated Fixed-route Microtransit: Design and Operations”. Under revision at *Operations Research*.

PRESENTATIONS

- Relay logistics: a multi-variable generation approach
 - 2021 INFORMS Annual Meeting
 - 2021 INFORMS Transportation and Logistics Workshop
 - 2022 Triennial Symposium on Transportation Analysis XI
- Task assignment and route planning in robotic warehousing
 - 2022 INFORMS Annual Meeting
 - 2023 Manufacturing and Service Operations Management Conference
 - 2023 INFORMS Annual Meeting

TEACHING EXPERIENCE

- **Optimization Methods (15.093)** Sept. 2023 - Dec. 2023
Teaching Assistant
 - Prepared and taught recitation sessions, held office hours, and supervised final projects
 - Introduced poll questions to create opportunities for interaction in large (100+ students) recitation sessions
- **Computing for Optimization and Statistics (15.S60)** Jan. 2023
Instructor of Record
 - Coordinated an eight session course on computational research pipeline design: data and visualization in R, machine learning in Python, optimization in Julia, high-performance computing, and version control
 - Designed and taught sessions on Git and high-performance computing
- Session Instructor Jan. 2022
 - Designed and taught a workshop on Git, Github, distributing computing, and LaTeX
- **Integer Programming and Combinatorial Optimization (15.083)** Jan. 2022 - May 2022
Teaching Assistant
 - Prepared and taught weekly recitation sessions, held office hours, and supervised final projects
 - Integrated active learning activities into the existing recitation materials
- **Georgia Tech Center for Academic Success** Aug. 2015 - May 2016
1-on-1 tutor

AWARDS AND FELLOWSHIPS

- **Dick and Jerry Smallwood Fellowship**, for graduate students who are applying mathematical models to problems of sustainability and climate 2024 - 2025
- **Goodwin Medal**, MIT's highest teaching award for a graduate instructor "who performed above and beyond the norm, and whose teaching efforts can truly be characterized as conspicuously effective" 2024
- **First Place in Georgia Tech Industrial Engineering Senior Design Competition** 2016
- **President's Undergraduate Research Award** 2015
- **Stamps President's Scholarship** 2012 - 2016

SERVICE

- **MIT ORC Spring Seminar Student Co-coordinator** 2024
- **MIT Teaching Development Fellow** 2022 - 2023
- **Social and Ethical Responsibilities of Computing Scholar** 2022

PROGRAMMING SKILLS

Languages: Julia, Java, Python, SQL, R