

# Amira Hijazi

---

AI Institute for Advances in Optimization  
Georgia Institute of Technology  
756 W Peachtree St NW,  
Atlanta, GA 30308

Email: [ahijazi6@gatech.edu](mailto:ahijazi6@gatech.edu)  
Website: [amhijazi.com](http://amhijazi.com)

## RESEARCH AREAS

**Methods:** Stochastic Optimization, Discrete Optimization, Deep Learning, Machine Learning

**Applications:** Healthcare Systems, Production Systems, Supply Chain

## PROFESSIONAL EXPERIENCE

**AI Institute for Advances in Optimization GaTech**, Atlanta, Georgia

Research Faculty, AI Lead for Supply Chains Thrust Sep 2024 - Present

Postdoctoral Fellow Jul 2023 - Sep 2024

**Projects:** Data-Driven E-Commerce Robust Order Fulfillment with Delivery Uncertainty  
Integrated Large-Scale Lot Sizing, Cutting Stock, and Transportation Planning  
Strategic Locomotive Assignment Optimization  
Constraint-aware Pattern Mining for Dynamic Load Consolidation  
End-to-End Learning for Parallel Machine Scheduling

**North Carolina State University**, Raleigh, North Carolina

Research Assistant, ISE Department Aug 2020 - Jun 2023

**Projects:** Neural Networks and Column Generation for Parallel Machine Scheduling  
Iterative Combinatorial Auctions Guided by Data Science

Teaching Assistant, ISE Department Aug 2019 - May 2020

**Course:** Quality Design and Control, Undergraduate Level

Research Assistant, ISE Department Aug 2018 - Jun 2019

**Project:** Risk-Averse Vaccine Allocation Using Stochastic Programming

**Los Alamos National Laboratory**, Los Alamos, New Mexico

Jun 2020 - Sep 2020

Graduate Research Assistant Intern, Theoretical Division

**Project:** Correcting Misalignment in Drone-Mounted LiDAR Point Clouds

**Freelancer.com**

May 2017 - May 2018

Freelance Industrial Engineer

**Projects:** Multiple projects for clients that involved Simulation, Optimization, and  
Data Analytics

**Islamic University of Gaza**, Gaza, Palestine

Aug 2016 - Oct 2016

Teaching Assistant, Department of Industrial Engineering

**Courses:** Operations Research, Operations Management, Statistical Quality Control,  
Materials Engineering, Systems Simulation, Engineering Economy

**European Gaza Hospital**, Gaza, Palestine  
Data Analytics Intern  
**Project:** Analysis of overcrowding in outpatient clinics

Jun 2015 - Aug 2015

## EDUCATION

**North Carolina State University**, Raleigh, NC USA 2018 - 2023  
Ph.D. in Industrial and Systems Engineering (ISE)  
- Thesis: Resource Allocation Using Mathematical Programming and Machine Learning  
- Advisors: Osman Ozaltin, Reha Uzsoy

**Islamic University of Gaza**, Gaza, Palestine 2012 - 2016  
B.S. in Industrial Engineering  
- Final Project: Proposed Scheduling Models Based on Real Life Instances.

## PAPERS

- [1] **Hijazi, A.**, Ozaltin, O., Uzsoy, R. All You Need is an Improving Column: Enhancing Column Generation for Parallel Machine Scheduling via Transformers, Under Review.  
doi: <https://doi.org/10.48550/arXiv.2410.15601>
- [2] Ye, T., Cheng, S., **Hijazi, A.**, Van Hentenryck, P. Contextual Stochastic Optimization for Omnichannel Multi-Courier Order Fulfillment Under Delivery Time Uncertainty, Under Review.  
<https://doi.org/10.48550/arXiv.2409.06918>
- [3] Bruys, T., Zandehshahvar, R., **Hijazi, A.**, Van Hentenryck, P. Confidence-Aware Deep Learning for Load Plan Adjustments in the Parcel Service Industry.  
**Accepted for Presentation at AAAI-25 Bridge: AI+ORMS**  
<https://doi.org/10.48550/arXiv.2411.17502>
- [4] Gopinath, S., Hijazi, H., Lemons, J., Collins, A., Schultz-Fellenz, E., Bent, R., **Hijazi, A.**, Riemersma, G.(2022). Globally Optimal Boresight Alignment of UAV-LiDAR Systems.  
<https://doi.org/10.48550/arXiv.2202.13501>

## AWARDS & HONORS

College of Engineering Travel Award for INFORMS Annual Meeting (\$500)	Oct 2019
College of Engineering Travel Award to attend "Understanding Health Behavior using Smartphones and Wearables Bootcamp" in Saskatoon, Canada	Jun 2019
Recipient of University Graduate Fellowship (\$4000)	Aug 2018
College of Engineering Travel Award for INFORMS Annual Meeting (\$500)	Nov 2018
Hani Qaddumi B.S. Scholarship, Hani Qaddumi Foundation	Aug 2015 - May 2016
Islamic University of Gaza Academic Excellence Scholarship	Aug 2012 - May 2016

## CONFERENCE PRESENTATIONS

**Amira Hijazi**, Osman Ozaltin, Reha Uzsoy. (2022). Neural Network and Column Generation for Parallel Machine Scheduling. INFORMS Annual Meeting.

**Amira Hijazi**, Osman Ozaltin, Maria Jensen, Hamed Yarmand, Julie Ivy. (2020). Risk-Averse Vaccine Allocation Using Stochastic Programming. INFORMS Annual Meeting.

**Amira Hijazi**, Osman Ozaltin, Maria Jensen, Hamed Yarmand, Julie Ivy. (2019). Mean-Risk

## SERVICE & LEADERSHIP

<b>INFORMS ORMS Tomorrow Student Magazine</b> Co-Lead Editor	Apr 2020 - Sep 2021
<b>ISE Department, NC State University</b> Diversity, Equity and Inclusion Committee Graduate Students Rep	Oct 2020 - Aug 2021
<b>EMPOWER Collaborative</b> Student Ambassador for Call for Code Spot Challenge	Aug 2020 - Oct 2020
<b>INFORMS Chapters/Fora Committee</b> Student Chapter Representative	Feb 2020 - Feb 2021
<b>INFORMS Health Applications Society</b> Student Liaison	Feb 2020 - Dec 2020
<b>NC State University Pursuing Operational Excellence Task Force</b> Student Representative	Dec 2019 - Jul 2020
<b>Graduate Student Association</b> Department of Industrial & Systems Engineering Representative	Sep 2019 - May 2021
<b>Graduate Student Association</b> Research Recognition Committee Member	Sep 2019 - May 2020
<b>INFORMS Annual Meeting</b> Daily E-news Student Writer	Oct 2019
<b>INFORMS Annual Meeting</b> Student Volunteer	Nov 2018
<b>Islamic University of Gaza IISE Student Chapter</b> Founder and President	Aug 2013 - May 2015
<b>Arab Innovation Network</b> Student Ambassador	Jun 2013 - Jun 2015