

Amira Hijazi

NSF AI Institute for Advances in Optimization (AI4OPT)
Georgia Institute of Technology
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EDUCATION

Ph.D. in Industrial and Systems Engineering 2018 – 2023

North Carolina State University, Raleigh, NC

- Thesis: Resource Allocation Using Mathematical Programming and Machine Learning
- Advisors: Osman Ozaltin and Reha Uzsoy

B.S. in Industrial Engineering 2012 – 2016

Islamic University of Gaza, Gaza, Palestine

- Final Project: Proposed Scheduling Models Based on Real-Life Instances

PUBLICATIONS/COMPLETED MANUSCRIPTS

Underlined indicates students under my supervision during the paper work.

- [1] ML-Enabled Large-Scale Scheduling of Paper Manufacturing and Distribution with Column Generation and Benders Decomposition.
Changkun Guan, **Amira Hijazi**, Pascal Van Hentenryck. *Soon to be submitted to MSOM*.
- [2] An Improving Column is All You Need: Enhancing Column Generation for Parallel Machine Scheduling via Transformers
Amira Hijazi, Osman Ozaltin, Reha Uzsoy. *Major Revision at INFORMS Journal on Computing*.
- [3] SPOT: Spatio-Temporal Pattern Mining and Optimization for Load Consolidation in Freight Transportation Networks.
Sikai Cheng, **Amira Hijazi**, Jeren Konak, Alan Erera, Pascal Van Hentenryck. *IEEE International Conference on Data Mining*, November 2025
 - Conference Acceptance Rate is 13%
- [4] Contextual Stochastic Optimization for Omnichannel Multi-Courier Order Fulfillment Under Delivery Time Uncertainty.
Tinghan Ye, Sikai Cheng, **Amira Hijazi**, Pascal Van Hentenryck. *Manufacturing & Service Operations Management*, October 2025.
 - 2025 INFORMS MSOM Practice-Based Research Competition, Honorable Mention.
- [5] Conformal Predictive Distributions for Order Fulfillment Time Forecasting.
Tinghan Ye, **Amira Hijazi**, Pascal Van Hentenryck. *International Conference on Computational Logistics*, September 2025.
- [6] Confidence-Aware Deep Learning for Load Plan Adjustments in the Parcel Service Industry.
Thomas Bruys, Reza Zandehshahvar, **Amira Hijazi**, Pascal Van Hentenryck. *Major Revision at INFORMS Journal on Data Science*.
 - Accepted for Presentation at AAI-25 Bridge: AI+ORMS

WORKING PAPERS

Underlined indicates students under my supervision

- [1] Practice-Based Optimization for the Strategic Locomotive Assignment Problem.
Yunji Kim, **Amira Hijazi**, Kevin Dalmeijer, Pascal Van Hentenryck.
- [2] Locomotive Assignment under Schedule Disruptions.
Yunji Kim, **Amira Hijazi**, Kevin Dalmeijer, Pascal Van Hentenryck.
- [3] Route Optimization Over Scheduled Services For Large-Scale Package Delivery Networks.
Mohammed Faisal Ahmed, **Amira Hijazi**, Pascal Van Hentenryck, Ahmed El Nashar.
- [4] Decision-Focused Learning for Pickup and Delivery Problems with Time Windows, Split Load, and Transshipment.
Sikai Cheng, **Amira Hijazi**, Pascal Van Hentenryck.

RESEARCH EXPERIENCE

Georgia Institute of Technology Atlanta, GA

NSF AI Institute for Advances in Optimization (AI4OPT)

Research Faculty, AI Lead for Supply Chains Thrust

Sep 2024–Present

Leading multiple research projects in collaboration with UPS, Union Pacific, Smurfit Westrock, and Best Buy to address large-scale supply chain problems using AI and optimization.

Projects: Route Optimization For Large-Scale Package Delivery Networks.

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

Postdoctoral Fellow

Jul 2023 – Sep 2024

North Carolina State University

Raleigh, NC

Research Assistant, Department of Industrial and Systems Engineering

Aug 2020 – Jun 2023

Projects: Learning-based optimization methods for production scheduling problems

Risk-Averse Vaccine Allocation Using Stochastic Programming

Los Alamos National Laboratory

Los Alamos, NM

Research Intern, Theoretical Division

Jun 2020 – Sep 2020

Project: Correcting Misalignment in Drone-Mounted LiDAR Point Clouds

European Gaza Hospital

Gaza, Palestine

Data Analytics Intern

Jun 2015 – Aug 2015

TEACHING EXPERIENCE

North Carolina State University

Raleigh, NC

Teaching Assistant, Department of Industrial and Systems Engineering

Aug 2019 – May 2020

Course: Quality Design and Control, Undergraduate Level

Islamic University of Gaza

Gaza, Palestine

PHD STUDENTS SUPERVISION

1. Changkun Guan

Advisor: Pascal Van Hentenryck
Degree Program: Operations Research
Project: *Large Scale Supply Chain Optimization for Paper Manufacturing Industry*
Advising Dates: 2025–Present

2. Tinghan Ye

Advisor: Pascal Van Hentenryck
Degree Program: Industrial Engineering
Project: *Data-Driven E-Commerce Robust Order Fulfillment with Delivery Uncertainty*
Advising Dates: 2023–Present
Activities: Co-author on 1 journal and 1 conference article
Presenter at 3 conferences
Award: INFORMS MSOM Practice-Based Research Competition, Honorable Mention

3. Yunji Kim

Advisor: Pascal Van Hentenryck
Degree Program: Industrial Engineering
Project: *Strategic Locomotive Assignment Optimization*
Advising Dates: 2023–Present
Activities: Co-author on 1 submitted article
Presenter at 2 conferences

4. Sikai Cheng

Advisor: Pascal Van Hentenryck
Degree Program: Machine Learning
Projects: *Data-Driven E-Commerce Robust Order Fulfillment with Delivery Uncertainty*
Dynamic Load Consolidation For Large-Scale Package Delivery Networks
Advising Dates: 2023–Present
Activities: Co-author on 1 journal and 1 conference article
Presenter at 2 conferences
Award: INFORMS MSOM Practice-Based Research Competition, Honorable Mention
Paper Accepted at IEEE Data Mining Conference with Acceptance Rate 13%

5. Jeren Konak

Advisor: Alan Erera
Degree Program: Operations Research
Project: *Dynamic Load Consolidation For Large-Scale Package Delivery Networks*
Advising Dates: 2024–2025
Activities: Co-author on 1 conference article
Presenter at 1 conference
Award: Paper Accepted at IEEE Data Mining Conference with Acceptance Rate 13%

6. Mohammed Faisal Ahmed

Advisor: Pascal Van Hentenryck
 Degree Program: Machine Learning
 Project: *Route Optimization For Large-Scale Package Delivery Networks*
 Advising Dates: 2024–Present
 Activities: Presenter at 1 conference

7. Thomas Bruys

Advisor: Pascal Van Hentenryck
 Degree Program: ECE Department
 Project: *Deep Learning for Load Plan Adjustments in the Parcel Service Industry*
 Advising Dates: 2023–2025
 Activities: Co-author on 1 submitted article
 Presenter at 2 conferences

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 Two-Stage Vaccine Allocation to Different Regions Under Uncertainty. INFORMS Meeting.

SERVICE & LEADERSHIP

INFORMS ORMS Tomorrow Student Magazine	Dec 2025
Mini Poster Competition Judge	
IISE Annual Conference	May 2025
Reviewer and Session Chair	
Journal of Heuristics	Jun 2024 - Present
Reviewer	
INFORMS ORMS Tomorrow Student Magazine	Apr 2020 - Sep 2021
Co-Lead Editor	
NC State University	
ISE Department: DEI Committee Graduate Students Representative	Oct 2020 - Aug 2021
EMPOWER Collaborative: Student Ambassador	Aug - Oct 2020
Pursuing Operational Excellence Task Force: Student Representative	Dec 2019 - Jul 2020
Graduate Student Association: ISE Department Representative	Sep 2019 - May 2021
Graduate Student Association: Research Recognition Committee Member	Sep 2019 - May 2020
INFORMS Chapters/Fora Committee	Feb 2020 - Feb 2021
Student Chapter Representative	

INFORMS Health Applications Society	Feb 2020 - Dec 2020
Student Liaison	
INFORMS Annual Meeting	Oct 2019
Daily E-news Student Writer	
INFORMS Annual Meeting	Nov 2018
Student Volunteer	
Islamic University of Gaza IISE Student Chapter	Aug 2013 - May 2015
Founder and President	
Arab Innovation Network	Jun 2013 - Jun 2015
Student Ambassador	