Anthony Karahalios   November 2025
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Curriculum Vitae

Education

Carnegie Mellon University, Tepper School of Business, Pittsburgh, PA

- Ph.D. Algorithms, Combinatorics, and Optimization   2025

Johns Hopkins University, Whiting School of Engineering, Baltimore, MD

- B.S. Applied Mathematics and Statistics   2017

Research Interests

Methodologies: Integer Programming, Dynamic Programming, Decision Diagrams
Applications: Transportation, Logistics

Publications

Submitted Works

- **A. Karahalios** and W.-J. van Hoeve. Column Elimination: An Iterative Approach to Solving Integer Programs. *Major Revision at Operations Research*, 2025. *Job Market Paper

Published Works

- **A. Karahalios**, S. Tayur, A. Tenneti, A. Pashapour, FS Salman, B Yıldız. A Quantum Inspired Bi-level Optimization Algorithm for the First Responder Network Design Problem. *INFORMS Journal on Computing*, 2024.

- **A. Karahalios** and W.-J. van Hoeve. Column Elimination for Capacitated Vehicle Routing Problems. In *Proceedings of CPAIOR* 2023.

- M. J. H. Heule, **A. Karahalios**, and W.-J. van Hoeve. From Cliques to Colorings and Back Again. In *Proceedings of CP* 2022.

- **A. Karahalios** and W.-J. van Hoeve. Variable Ordering for Decision Diagrams: A Portfolio Approach. *Constraints 2022.*

Working Papers

- G. Cornuéjols, **A. Karahalios**, and V. Patil. Computing a Nonnegative Dyadic Solution to a System of Linear Equations. Submitting to *Mathematical Programming Computation*

- M. Jun Ota, **A. Karahalios**, R. Fukasawa, and W.-J. van Hoeve. Combining Column-Elimination with Column-Generation. Submitting to *INFORMS Journal on Computing*.

- T. Egner, **A. Karahalios**, J. Yarkony, L.-M. Rousseau, W.-J. van Hoeve. A Column-Generation Alternative to Solve Vehicle Routing Problems. Submitting to *INFORMS Journal on Computing*.

- **A. Karahalios** A Set-Based Dynamic Program for the Capacitated Vehicle Routing Problem. Submitting to *CPAIOR*.

Honors & Awards

TSL Best Student Paper Award Finalist	2025
Gerald L. Thompson Doctoral Dissertation Award in Management Science	2025
CPAIOR Best Student Paper	2023
IPCO Best Poster Honorable Mention	2023
NSF Graduate Research Fellowship	2022
CMU Tepper Egon Balas Fellowship	2020

JHU Applied Mathematics and Statistics Achievement Award	2017
JHU Professor Joel Dean Award for Excellence in Teaching (TA)	2016, 2017
JHU Mathematical Modeling Prize	2016, 2017

Teaching

Carnegie Mellon University

- Instructor 70-460 Mathematical Models for Consulting (Undergrad) Rating: 4.78/5, Fall 2022
- TA 46-888 Optimization for Prescriptive Analytics (Online MSBA)   Summer 2022, 2023
- TA 45-751 Optimization (MBA)   Spring 2022
- TA Math Bootcamp (MBA)   Summer 2021

Johns Hopkins University

- TA 550.171 Discrete Mathematics (Undergrad)   Fall 2015, Spring 2016, Fall 2016
- TA 550.420 Intro to Probability (Undergrad)   Spring 2017

Mentoring

Joe Wang (Math Undergrad) - Relaxations for the Travelling Tournament Problem	2023

Work Experience

Optilogic Ann Arbor, Michigan   2025-current
MIP Engineer - Solving supply chain design problems

Amazon Seattle, Washington   2024
Research Scientist Intern - Solving human-robot picking problems in fulfillment centers

Marshall Wace Asset Management New York City, New York   2017-2020
Quantitative Software Developer - Optimizing order routing and custodian management

Service

Academic Conferences and Article Reviews

- Session Chair (INFORMS Annual Meeting)   2022, 2023, 2024
- Conference Chair, Sponsorship Chair (YinzOR)   2022, 2023, 2024
- Reviewer for Operations Research (2024), INFORMS Journal on Computing (2023, 2024, 2025), Discrete Optimization (2024), Transportation Science (2025), International Transactions in OR (2024), Constraint Programming (2022, 2024), CPAIOR (2021)

CMU INFORMS Student Chapter

- President, Vice-President   2021, 2022
- Podcast Host (Optimizing You)   2022-2024

References

Professor Willem-Jan van Hoeve
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Professor John Hooker
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