

Vrishabh Patil

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ACADEMIC BACKGROUND

Carnegie Mellon University

PhD Candidate, Operations Research
Advisor: Gérard Cornuéjols

Expected: 2027

Master of Science, Operations Research

2022 - 2024

University of Wisconsin-Madison

Bachelor of Science, Industrial Engineering
Undergraduate Research Advisor: Yonatan Mintz
GPA: 4.00

2018 - 2022

RESEARCH INTERESTS

Integer Programming, Discrete Optimization, Lattice Theory, Convex Optimization, Network Optimization, Portfolio Management, Data-driven Decision-Making.

JOURNAL PUBLICATIONS

Healthcare Applications of 0-1 Neural Networks in Prescriptive Problems with Observational Data

Vrishabh Patil and Yonatan Mintz.

Health Care Management Science (2026).

Addressing Estimation Errors on Expected Asset Returns through Robust Portfolio Optimization

Gérard Cornuéjols, Özgün Elçi, Vrishabh Patil.

Quantitative Finance (2026).

Reducing the Chvátal Rank through Binarization

Gérard Cornuéjols and Vrishabh Patil.

Operations Research Letters (2024).

CONFERENCE PUBLICATIONS

The Chvátal Rank of 2-Dimensional Integer-Free Polyhedra

Gérard Cornuéjols and Vrishabh Patil.

To appear in the *9th International Symposium on Combinatorial Optimization*, Kuşadası, Turkey.

Simple and Effective Inventory Hedging for Delivery Speed Optimization

Cristiana Lara, Arash Haddadan, Vrishabh Patil.

13th Annual Consumer Science Summit, San Diego, CA, USA.

**INDUSTRY
EXPERIENCE**

Amazon, Bellevue, Washington May 2026 - Aug 2026
Applied Scientist Intern - Modeling and Optimization

- Analyzed Amazon's network topology in the Rural Rapid Logistics (R2L) space.
- Developed models and algorithms for Amazon's sub-same Day and quick commerce facilities, jointly optimizing site location and jurisdiction planning within both programs.
- Deployed an integer programming model to support Amazon's 5-year sub-same day topology goals as an end-to-end, productionized pipeline.

Amazon, Bellevue, Washington May 2025 - Aug 2025
Research Scientist Intern - Modeling and Optimization

- Conducted research on Amazon's order-to-path assignment problem, developing and implementing algorithms to improve delivery speed promises across the network.
- Designed and implemented novel online assignment algorithms which outperform the baseline greedy approach by improving delivery speed by 8%.

Accuray Inc., Madison, Wisconsin Sept 2021 - Dec 2021
Manufacturing Engineering Intern

IN SUBMISSION **Computing a Nonnegative Dyadic Solution to a System of Linear Equations**

G rard Cornu jols, Anthony Karahalios, **Vrishabh Patil**
Mathematical Programming Computation.

A Hereditary Property of Cutting Plane Procedures

G rard Cornu jols and **Vrishabh Patil**.
Mathematics of Operations Research.

**IN
PREPARATION**

The Lasserre Hierarchy for the Cropped Cube
G rard Cornu jols, **Vrishabh Patil**, Jiaye Wei.

**AWARDS AND
HONORS**

William Larimer Mellon Fellowship	2022 - 2024
Anthony and Alice Thistlethwaite Scholarship	2019 & 2021
Robert A. Ratner Scholarship	2020

**TECHNICAL
SKILLS**

Computer Programming: Python, R, C++, SQL