Ulysse Hennebelle

Ph.D. Student in Operations Research

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EDUCATION

Cornell University - Cornell Tech 2024-Present
Ph.D. Student in Operations Research and Information Engineering *New York, NY*
- **Advisor:** Omar El Housni.
- **Selected coursework:** Analysis of Algorithms, Convex Analysis, Integer Programming, Online Algorithms and Market Design.

École Polytechnique 2020-2024
Ingénieur Polytechnicien (Bachelor's and Master's degree) *Palaiseau, France*
- **Final rank:** 34/435.
- **Selected coursework:** Operations Research, Statistical Modeling of Processes, Algebraic Topology, Quantum Physics, Competitive Programming, Deep Learning.

RESEARCH INTERESTS

Online decision-making, optimization under uncertainty, approximation algorithms, combinatorial optimization, assortment optimization, revenue management.

PUBLICATIONS AND WORKING PAPERS

Papers Under Review

[1] **Two-sided Assortment Optimization: Adaptivity Gaps and Approximation Algorithms**
with Omar El Housni and Alfredo Torrico.
Operations Research, accepted for publication.
Preliminary version: Adaptivity Gaps in Two-Sided Assortment Optimization, IPCO 2024, pp. 139-153.

Conference Papers

[2] **Runtime Analyses of Multi-Objective Evolutionary Algorithms in the Presence of Noise**
with Matthieu Dinot, Benjamin Doerr, and Sebastian Will.
Proceedings of IJCAI 2023, pp. 5549-5557.
A short version appeared in the GECCO Companion 2024, pp. 33-34.

TEACHING EXPERIENCE

Teaching assistant for graduate (M.Eng.) courses at Cornell Tech, serving classes of 60+ students.

CS 5854/ORIE 5138 Networks and Markets
Teaching Assistant, Graduate (M.Eng.) *Spring 2026*

ORIE 5132 Pricing Analytics and Revenue Management
Teaching Assistant, Graduate (M.Eng.) *Spring 2026*

ORIE 5530 Modeling Under Uncertainty
Teaching Assistant, Graduate (M.Eng.) *Fall 2025*

ORIE 5600 Financial Engineering with Stochastic Calculus
Teaching Assistant, Graduate (M.Eng.) *Fall 2024*

INDUSTRY EXPERIENCE

Data Scientist Intern May-August 2026
New York City Police Department | Siegel PiTech PhD Impact Fellow *New York, NY*
- Built a portable Python forecasting pipeline for four years of NYC 311 data and 17M NYPD 911 calls; mapped 99.9% of calls to 303 patrol sectors and created 1.33M sector-by-shift records.
- Engineered 39 lag, calendar, weather, and Census features for sector, precinct, and police-shift forecasts at several horizons.
- Benchmarked Prophet, Ridge, and Histogram Gradient Boosting across nine forecasting tasks; packaged reproducible scripts and source code.

- Developed a chronic location detection algorithm based on Kulldorff's scan statistic and a novel convex polytope approach that improved on the standard circle-based method in 93% of cases.

Visiting Associate Jun-Aug 2022
Boston Consulting Group *Casablanca, Morocco*
- Worked with BCG Digital Ventures on strategy and venture-building projects for large clients.

HONORS AND AWARDS

Siegel PiTech PhD Impact Fellowship Summer 2026
Professor Robert E. Bechhofer Fellowship, Cornell University Spring 2025

LEADERSHIP ACTIVITIES

Voting Student Representative 2021-2023
Institut Polytechnique de Paris Board of Directors *Palaiseau, France*
- Represented an 8,000-student body on the board of directors.

Officer Sep 2020-Apr 2021
French Army *France*
- Led a platoon of 28 recruits; managed military training, discipline, safety, and well-being.

TALKS

Two-sided Assortment Optimization: Adaptivity Gaps and Approximation Algorithms
- INFORMS Annual Meeting, 2026 (scheduled).
- INFORMS Annual Meeting, 2025. **Constrained Two-Sided Assortment Optimization.**
- Revenue Management and Pricing Conference, 2025. **Constrained Two-Sided Assortment Optimization.**

TECHNICAL SKILLS AND LANGUAGES

Languages: French (native); English (fluent).
Data and machine learning: Python, NumPy, pandas, scikit-learn, geopandas.
Optimization: Gurobi, CVXPY.
Other: Git, LaTeX, C++, Java, R, OCaml.
Interests: GeoGuessr (online geography); skydiving (military training).