

SHEFALI RAMAKRISHNA WESTFIELD

PhD candidate in Operations Research seeking to transition into quantitative finance
Current research focus in stochastic modeling, optimal stopping, and decision-making under uncertainty

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EDUCATION

Cornell University

Aug. 2022 - May 2027 (expected)

- Fourth-year PhD Student in Operations Research. GPA: 4.02/4.0
- Research focus: Decision-making under uncertainty, queueing, scheduling. Advised by Ziv Scully
- Coursework: Stochastic Control, Probability Theory, Mathematical Programming, Bayesian Statistics, Stochastic Processes

Bryn Mawr College

Sep. 2018 - May 2022

- 4-year dual B.A and M.A. in Mathematics with Honors, magna cum laude. Graduate GPA: 4.0/4.0
 - M.A. Thesis: "[Numerical Methods in Sustainability](#)", advised by Victor Donnay.
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SELECTED AWARDS

- Graduate Student Research Competition, 1st Place ACM SIGMETRICS, 2024
 - Outstanding Student Mathematical Paper Prize Mathematical Association of America (EPaDel chapter), 2022
 - Anna Pell Wheeler Prize in Mathematics Bryn Mawr College, 2022
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NON-PHD WORK AND RESEARCH EXPERIENCE

Undergraduate Researcher at Mathematics SMALL REU

Williams College, Jun 2021 - Aug 2021

- Built Python/SageMath tool to efficiently compute gonality of finite graphs
- Implemented algorithms for chip-firing and divisor rank computations

Operational Analytics Intern

Air Methods Corporation, May 2020 - Aug 2020

- Built scheduling tool for medics and nurses in Python using pandas and MIP; tool took availability spreadsheet as input and output shift assignment; reduced runtime 100×
 - Implemented preference-based constraints; tool now deployed across 140+ U.S. air transport bases
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PHD RESEARCH EXPERIENCE

Data-Driven Scheduling from Samples

- Designed sample-based approximation of optimal scheduling policy and proved it achieves near-optimal response time without any parametric assumptions about the underlying job size distribution
- Proved finite-sample performance guarantees by bounding deviation between empirical and true tail functions

Scheduling with Costly Interruptions

- Derived the first exact response time distribution with stochastic interruption (preemption) delays under static preemptive priority policies; developed a new analytical framework using multitype Galton-Watson branching processes to model service-arrival coupling
 - This analysis enables principled design of preemptive scheduling policies that balance gains in responsiveness with delay from preemption; this design was previously impossible due to modeling limitations
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SELECTED PUBLICATIONS AND SHORT PAPERS

- "[Empirical Gittins: M/G/1 scheduling from samples](#)." Ramakrishna, S., Harlev, A., and Scully, Z.
Presented at the Workshop on Mathematical performance Modeling and Analysis (MAMA) 2025. Manuscript in progress.
 - "[Transform analysis of preemption overhead in the M/G/1](#)." Ramakrishna, S. and Scully, Z.
Presented at MAMA 2024. Manuscript in progress. Winner of 2024 ACM SIGMETRICS Student Research Competition.
 - "[Uniform scrambles on graphs](#)." Ramakrishna, S., et al.
Published in 2023 Australasian Journal of Combinatorics.
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SKILLS

Programming: Python (NumPy, sciPy, Pandas, MIP, SageMath), MATLAB, LaTeX, Git

Theoretical: Stochastic Control, Optimal Stopping, Queueing Theory, Data-driven Policy Design

ADDITIONAL INFORMATION:

- U.S. Citizen
- Available for in-person internships beginning on or after May 18, 2026