

Shefali Ramakrishna Westfield

Website: shefali.link • Email: sr899@cornell.edu • Phone: 510-673-9980

EDUCATION

Cornell University College of Engineering Aug. 2022 - May 2027 (*expected*)

- PhD Candidate in Operations Research. GPA: 4.02
- Research focus: Decision-making under uncertainty, queueing, scheduling. Advised by Ziv Scully, Ph.D.
- Coursework: Stochastic Control, Probability Theory, Mathematical Programming, Bayesian Statistics, Stochastic Processes

Bryn Mawr College Sep. 2018 - May 2022

- B.A. and M.A. in Mathematics with Honors, magna cum laude (4-year dual program). M.A. GPA: 4.0/4.0
- M.A. Thesis: [“Numerical Methods in Sustainability”](#), advised by Victor Donnay, Ph.D.

SKILLS

Programming: Python (NumPy, SciPy, Pandas, scikit-learn, PyTorch, MIP, SageMath), SQL, R, MATLAB, LaTeX, Git

Theoretical: Stochastic Control, Optimal Stopping, Queueing Theory, Data-Driven Decision Making, Machine Learning

SELECTED RESEARCH EXPERIENCES

Data-Driven Scheduling from Samples

- Designed a sample-based approximation of the optimal scheduling policy requiring no parametric assumptions about the underlying job size distribution
 - Proved finite-sample performance guarantees using tools from empirical process theory and queueing analysis, establishing convergence to optimal mean response time as sample size grows
- [“Empirical Gittins for Data-Driven M/G/1 Scheduling with Arbitrary Job Size Distributions.”](#) Ramakrishna, S., Harlev, A., and Scully, Z.

Published in Proceedings of the ACM on Measurement and Analysis of Computing Systems (SIGMETRICS), 2026.

Scheduling with Costly Interruptions

- Derived the first exact response time distribution for preemptive scheduling policies with stochastic interruption delays, previously uncharacterized due to modeling limitations
 - Developed a new analytical framework using branching processes to model the coupling between job arrivals and service interruptions, enabling principled design of preemption-aware scheduling policies
- [“Priority Scheduling in the M/G/1 with Preemption Overhead.”](#) Ramakrishna, S., Peng, E., and Scully, Z.

Manuscript submitted. Presented at MAMA 2024. Winner of 2024 ACM SIGMETRICS Student Research Competition.

APPLIED EXPERIENCES

Queueing Simulation (in progress) Self-directed, Jan 2026 - present

- Designing and implementing a Python simulation to compare empirical Gittins against direct learning policies across static and non-stationary job size distributions, extending published theoretical results to an online setting
- Implementing $O(n)$ rank precomputation for empirical Gittins policies to enable efficient simulation at scale

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

TEACHING EXPERIENCES

- Teaching Assistant, Generative AI with OR Applications — supported coursework applying generative and agentic AI methods to operations research problems
- Teaching Assistant — Engineering Probability and Statistics, Learning with Big Messy Data, Ordinary Differential Equations, Linear Optimization, Multivariable Calculus

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