

# Emily Simons

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## PROFILE

### AI + Machine Learning + Data Analytics + Data Visualization + Python + R + Slurm + SQL + Tableau

Recent Bowdoin College graduate and current Fulbright Scholar at Helmholtz Munich with strong background in mathematics, computer science, data analytics, and machine learning. Detail-oriented data enthusiast and lifelong learner passionate about contributing to a responsible data science community and applying data-driven insights to issues of public concern.

## EDUCATION

### Bowdoin College—Brunswick, Maine

*Bachelor of Arts in Mathematics with a Minor in Computer Science, May 2024*

- GPA: 4.0, *summa cum laude*
- [Phi Beta Kappa National Honor Society](#) | Member since Fall 2023
- [Edward Sanford Hammond Mathematics Prize](#) awarded to a mathematics major with distinction | 2024
- [George Wood McArthur Prize](#) for the highest academic standing among pre-matriculation scholarship recipients | 2024
- [Mathematics Department Award](#) for contributing to a broad and inclusive mathematical community | 2022

## WORK & INTERNSHIP EXPERIENCE

### Fulbright Scholar, AI for Health @ Helmholtz Munich—Munich, Germany

*Visiting Student at the AI for Data-Oriented Science Lab (Fall 2024—Present)*

The [Fulbright Study/Research Award](#) supports scholars during a 10-month funded research stay abroad.

- Co-authored [publication](#) accepted in ICML 2025 that introduces a data-ablation framework and novel metrics for evaluating the quality of graph-learning datasets that benchmark GNN performance. Sub-reviewed for ICML, earning “top reviewer” recognition for reviewing team. Will attend ICML in Vancouver, Canada in July 2025.
- Developed an [interactive dashboard](#) for the *Analyzing Physician-Patient Referral Network Topology* ([APPARENT](#)) project that translates topological metrics from novel healthcare referral networks into meaningful insights for clinicians.
- Refactored and expanded [Synthesizing Curvature Operations & Topological Tools](#) codebase, a [pip-installable](#) Python package leveraging the persistent homology of curvature filtrations to quantify structural differences in graphs.
- Won 1<sup>st</sup> Place at the [herHack Hackathon](#) in Bern, Switzerland (November 2024) out of 40+ teams.

### Department of Digital and Computational Studies, Bowdoin College—Brunswick, Maine

*Research Assistant (Fall 2023—Summer 2024) | Learning Assistant (Spring 2024)*

As a research assistant, met weekly with Prof. Mohammad Irfan to discuss research progress and relevant literature. As a learning assistant, provided support for Computational Methods class of ~35 students (Python and R) four hours per week.

- Investigated linear influence networks and computational game theory, with special focus on generalizing a message-passing algorithm for finding approximate Nash equilibrium from trees to more complex graphs.
- Led daily summer student research meetings, contributing regular two-hour presentations and six slide-decks.

### The MITRE Corporation—McLean, Virginia

*Systems Engineering Intern (Summer 2023)*

Contemporaneously supported two project teams for MITRE, a non-profit that runs federally-funded research centers.

- Designed data processing pipeline and built interactive Tableau dashboard, presented to senior-level staff.
- Automated Confluence wiki maintenance with Python and documented for handoff to external collaborators.
- Received three Spark Awards that recognized personal project contributions.

### Bio-IT Team, European Molecular Biology Laboratory—Heidelberg, Germany

*Training and Computational Support Intern (Summer 2022)*

Internship funded by the competitive [Deutscher Akademischer Austauschdienst \(DAAD\) RISE Germany](#) scholarship.

- Created new website's front- and back-end from scratch using Django, HTML, CSS with SQL database.
- Supported weekly hour-long computational support sessions and internal data analysis training courses.

## LEADERSHIP

### Bowdoin Women in Math, Bowdoin College—Brunswick, Maine

*Leader (Fall 2021—Spring 2024)*

- Launched virtual career panel series with alumnae and organized career talks with visiting lecturers.
- Fostered community by establishing biweekly study nights and inter-grade mentorship program.

### Office of Admissions, Bowdoin College—Brunswick, Maine

*Tour Guide (Spring 2022—Fall 2022) | Senior Interviewer (Fall 2023)*

- Led engaging 60-minute tours for prospective students and families. Answered questions regarding student life.
- Conducted interviews with prospective students and provided written evaluations to Admissions Office.