Hannah Friedman

Email: hannahfriedman@berkeley.edu

Website: `hannahyfriedman.com`

Department of Mathematics
University of California, Berkeley

EDUCATION

University of California, Berkeley — Expected December 2026
PhD Candidate in Mathematics jointly advised by Bernd Sturmfels and Serkan Hoşten
Harvey Mudd College — May 2023
BS in Mathematics with High Distinction, Honors in Mathematics
Thesis advised by Michael Orrison

AWARDS & HONORS

Chancellor's Fellowship, UC Berkeley — 2023
Alvin White Prize, Harvey Mudd College — 2023
Presented to a student or students who have contributed greatly to the humanistic side of the Harvey Mudd College Mathematics Community.
Giovanni Borrelli Mathematics Fellowship, Harvey Mudd College — 2021 - 2022
Conferred on one or two junior mathematics majors in recognition of the ability to complete high quality research independently or in tandem with a faculty advisor.
Courtney S. Coleman Prize, Harvey Mudd College — 2021
Awarded to three rising juniors who excel in mathematics.

RESEARCH ACTIVITES

- Organized Non-Linear Algebra Seminar — UC Berkeley, December 2024
- Workshop for Women in Algebraic Statistics — St John's College, Oxford, July 2024
- Visit to Max Planck Institute for Mathematics in the Sciences — Leipzig, Summer 2024
- Visit to Max Planck Institute for Mathematics in the Sciences — Leipzig, Summer 2023

PUBLICATIONS

- Hannah Friedman. Likelihood Geometry of the Squared Grassmannian. arXiv:2409.03730 (2024).
- Karel Devriendt, Hannah Friedman, Bernhard Reinke, Bernd Sturmfels. The Two Lives of the Grassmannian, to appear in *Acta Universitatis Spientie, Mathematica.*
- Hannah Friedman, Bernd Sturmfels, Max Zubkov. Likelihood Geometry of Determinantal Point Processes. *Algebraic Statistics*, **15**, (2024) 15-25.
- Hannah Friedman. Long Increasing Subsequences, senior thesis advised by Michael Orrison.
- Hannah Friedman, Amani R. Maina-Kilaas, Julianna Schalkwyk, Hina Ahmed, and Jamie Haddock. An Interpretable Joint Nonnegative Matrix Factorization-Based Point Cloud Distance Measure, *Proceedings of the Conference on Information Sciences and Systems (CISS)*, Baltimore, MD, March 2023.

TALKS

Key: ♣ = invited; ♠ = contributed; ◇ = seminar/lecture.

- The Squared Grassmannian
  ♣ University of Washington Combinatorics and Geometry Seminar, January 15, 2025.
- Likelihood Geometry of the Squared Grassmannian
  ♠ AMS Special Session on Algebraic Statistics in Our Changing World at JMM, January 8, 2025
  ◇ UC Berkeley Combinatorics Seminar, October, 2024.
  ♠ Workshop for Women in Algebraic Statistics at St. John's College, Oxford, July, 2024.
- What is algebraic statistics?
  ♠ Bay Area Discrete Math Day, December 7, 2024.

- Phylogenetics and Tensors
  ◇ Tensor reading group at UC Berkeley, November, 2024.
- Representation Theory for Spaces of Tensors
  ◇ Tensor reading group at UC Berkeley, October, 2024.
- Optimization over Two Embeddings of the Grassmannian
  ♣ Codex seminar, July 2024.
- Likelihood Geometry of Determinantal Point Processes
  ◇ Algebra-Geometry-Combinatorics Afternoon at SFSU, November 2023.
- Long Increasing Subsequences
  ♠ Harvey Mudd Thesis Presentation Days
- A New Basis for k-Local Class Functions
  ♠ 2023 Joint Math Meetings

TEACHING & MENTORSHIP
- URep Leader, Fall 2024 - current
- Graduate Student Instructor at UC Berkeley:
  - Math 55: Discrete Math, Fall 2024
  - Math 1A: Calculus I, Spring 2024
- UC Berkeley Directed Reading Program Mentor, Spring 2024
- President of Women in Math at Harvey Mudd College, Fall 2022-Spring 2023
- Teaching Assistant at Harvey Mudd College, Spring 2021 - Spring 2023

SKILLS
- Programming Languages: Python, MatLab, Macaulay2, Java, C++, R, Julia
- Languages: English (fluent), German (fluent), Mandarin (proficient), Hebrew (proficient)