Hannah Friedman

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EDUCATION

Harvey Mudd College, Claremont, CA   Expected May 2023
Bachelor of Science, Mathematics, GPA: 3.9/4.0
Courtney S. Coleman Prize (Sophomore Mathematics Award)
Dean's List

College Preparatory School, Oakland, CA   June 2019
GPA: 3.9/4.0
Senior Class Math Department Award

RELEVANT COURSES

Mathematics: Galois Theory, Representation Theory, Abstract Algebra I, Real Analysis I, Intro to Probability and Statistics, Discrete Math, Core Math
Computer Science: Principles of Computer Science, Data Structures/Program Development

SKILLS

Programming Languages: Python, Java, Racket, C++, R, MatLab, Macaulay2, LaTeX
Languages: German (fluent), Mandarin (conversant), Hebrew (conversant)

RESEARCH EXPERIENCE

Mathematics Department, Harvey Mudd College   Fall 2021
Investigating relationships between trace ideals and other ideals in commutative rings
  – Independently learning background material for research project
  – Studying the traces of primary ideals in commutative Noetherian rings
  – Using algebraic software to generate examples

Computer Science Department, Harvey Mudd College   Summer 2021
Applied tools from linear algebra to create a new method for performing symbolic execution
  – Worked with a research team to generate and optimize an algorithm that utilizes fast matrix multiplication to perform symbolic execution
  – Designed and ran tests to compare matrix symbolic execution to traditional symbolic execution

Mathematics Department, Harvey Mudd College   Spring 2020
Explored the band-limitedness of Discrete Fourier Transforms of permutation statistics
  – Studied permutation statistics as elements of the group algebra $\mathbb{C}S_n$
  – Created a framework to show why permutations statistics are sparse under the Discrete Fourier Transform
  – Developed computational tools to verify theoretical results

WORK EXPERIENCE

Tutor, Harvey Mudd College   Spring 2021 - Now
  – Help students build intuition and answer questions about Calculus, Linear Algebra, Differential Equations, Discrete Math, Abstract Algebra I, and Principles of Computer Science

Grader, Harvey Mudd College   Fall 2020 - Now
  – Grade weekly or biweekly homework sets for Calculus, Linear Algebra, and Abstract Algebra I

LEADERSHIP EXPERIENCE

Women in Math Mentorship Coordinator, Harvey Mudd College   Fall 2021
- Support female students in mathematics and strengthen the Mathematics community by fostering connections between underclassmen, upperclassmen, and alumni

Sustainability Director, Harvey Mudd College Student Government   Fall 2020 - Now
- Coordinate and support teams of undergraduate volunteers on various projects focused on increasing campus sustainability