FORD MCDILL – CURRICULUM VITAE

Wesleyan University
Mathematics and Computer Science
fmcdill@wesleyan.edu

Education

Wesleyan University
B.A., Mathematics and Computer Science
September 2021-Present (Expected Graduation date of May 2025)

Harvard-Westlake Upper School
High School Degree
September 2018-June 2021

Work and Research Experience

Researcher and Programmer, Wesleyan University
August 2024-Present
I have been working closely with my research advisor, Professor Iris Yoon, to study and learn about Topological Data Analysis, the subject of my undergraduate thesis. I am also working on implementing a highly parallelizable strategy for calculating the persistent homology of a point cloud using a new software called Open Applied Topology.

Course Assistant, Wesleyan University
January 2021-Present
I have been a course assistant for Discrete Mathematics and Calculus I three times each, and am going to be an assistant for Algorithms and Complexity in the spring. This job includes leading two help sessions a week for students as well as grading homework.

Researcher and Programmer, Institute for Computational and Experimental Research in Mathematics
June 2024-August 2024
In this summer REU, my group and I created alternative methods to rank rodeo riders that were more holistic than the methods currently used. As a programmer, I used Python, MatLab, and R to analyze our data. The project culminated in a poster as well as a paper, which is still under review.

Researcher, Wesleyan University
June 2023-August 2023
Under the guidance of Professor David Constantine, a colleague and I did research on Zebra Structures, a newly created topological object. At the end of the summer, we created a poster detailing our findings.

Honors and Awards

- Robertson Prize in Mathematics - Awarded to a sophomore at Wesleyan University for excellence in mathematics
- Rae Shortt Prize - Awarded to a junior at Wesleyan University for excellence in mathematics
- Top 500 on the 2022 Putnam Exam
- National Merit Scholar in California in 2021
- Member of the Dean's List at Wesleyan for 6 semesters

Extracurricular Activities

- WESU Radio Station - *Vice President (2024-Present), Events Coordinator (2023-2024)*
- Disengineering Society - *Leader* (This is a Wesleyan Student Group that focuses on repurposing electronic waste to make instruments and other DIY Electronics)
- Wesleyan Undergraduate Math Club - *Member*

Talks Given

- *All the Numbers: The Creation and Properties of the Surreal Numbers* - May 2023
- *Deterministic Finite Automata* - November 2023
- *Zebra Structures* - November 2023

Skills

- Using Python, MatLab, Microsoft Office, Solidworks, R, and LaTeX
- Formatting a Proof and formalizing mathematical ideas
- Teaching and explaining complicated mathematical concepts
- Working with others
- Listening and understanding other people's ideas
- Leading a team and taking charge when leadership is needed

Applicable Coursework

- Mathematical Foundations – Calculus I, II, III, Linear Algebra, Discrete Mathematics
- Computer Science Foundations – Computer Science I and II
- Advanced Mathematics – Real Analysis, Abstract Algebra, Galois Theory, Intro to Probability, Graph Theory
- Advanced Computer Science – Automata Theory, Design of Programming Languages, Algorithms and Complexity
- Graduate Courses – Topology and Analysis