Eric Zhu

8907 La Plata Drive, College Park 20742
410-567-3379 ♦ ezhu2009@gmail.com
https://www.linkedin.com/in/eric-zhu718/

Education

University of Maryland, College Park (UMD) Sept 2021 - May 2024
Bachelor of Science, Computer Science
Bachelor of Science, Mathematics

- Cumulative GPA: 3.97/4.0
- STEM GPA: 4.0/4.0

Computer Science Departmental Honors June 2022 - May 2024

- Honors research program in computer science

University Honors Program Sept 2021 - June 2023

- Honors program offered to distinguished UMD students

Centennial High School, Ellicott City MD Sept 2017 - June 2021

Unweighted GPA: 4.0, Weighted GPA: 4.88

Top 5% of graduating class

Research Experience

UMD Robotics Center, Perception and Robotics Group (PRG) College Park, Maryland
Computer Vision Research Intern Feb 2022 - August 2022

- Developed self-supervised neural network for depth estimation
- Created Lucas Kanade computer vision algorithm for optical flow detection
- Examined applications of machine learning in control theory

UMD School of Computer, Mathematical, and Natural Sciences College Park, Maryland
Machine Learning Research Intern Sept 2021 - Feb 2022

- Applied kNN and PCA/SVD to analyze dynamical systems
- Worked under distinguished professor Dr. Sharma to model chaotic systems in physics

University of Maryland Baltimore (UMB), School of Medicine Baltimore, Maryland
Data Science and Statistics Intern June 2020 - Aug 2020 June 2018 - Aug 2018

- Performed latent class statistical analysis on maternal depression
- Coauthored (second author) a paper accepted by the journal Plos One
- Collected data for project CHAMP, an intervention project to promote a healthy lifestyle among preschoolers in low-income households

Publications

PLOS One, Second Author January 2022

- Wang Y, Zhu E, Hager ER, Black MM (2022) Maternal depressive symptoms, attendance of sessions and reduction of home safety problems in a randomized toddler safety promotion intervention trial: A latent class analysis. PLoS ONE 17(1): e0261934. https://doi.org/10.1371/journal.pone.0261934

Relevant Coursework

Math858R / CMSC 752 - Ramsey Theory and Its Applications (A) Spring 2022

- Doctoral class about graph theory, combinatorics, and colorings and their applications to computer science

Math 405 - Linear Algebra (A+) Spring 2022

- Proof-based linear algebra course on linear algebra from an abstract perspective

CMSC 216 - Computer Systems (A+) Spring 2022
- Class about low level programming in C

Math 341H - Multivariable Calculus, Linear Algebra, and Differential Equations II Honors (A+) Spring 2022
- Proof-based honors class with a unified approach to all three subjects with an emphasis on ordinary differential equations

Math 340H - Multivariable Calculus, Linear Algebra, and Differential Equations I Honors (A+) Fall 2021
- Proof-based honors class with a unified approach to all three subjects
- Dr. Wong taught spectral graph theory the last 5 weeks of the semester

HNUH 258A - Big Data in Agriculture (A+) Fall 2021
- University Honors class on using R programming to analyze trends in agriculture
- Did final project on analyzing raster soil moisture data and graphing its effects on Chinese rice production

CMSC 250 - Discrete Mathematics (taken at Howard Community College) (A) Spring 2021
- Class about combinatorics and number theory in computer science

Awards

American Invitational Math Exam (AIME) qualifier March 2019 and March 2020
Score of 8

Science Olympiad April 2021
1st place team in Maryland, personally scored 2nd and 4th at states on Machines and Circuit Lab

FTC Robotics March 2021
3rd in Maryland, qualified for Worlds

Mathcounts Math Competition Feb 2017
Scored 19th in the state of Maryland in Mathcounts

USA Computing Olympiad Dec 2019
Silver Division

National Merit Scholar Nov 2019
Scored top 1% of all PSAT takers in Maryland

Activities

FTC Robotics, *Lead Programmer* Sept 2019 - June 2021
- Led and developed java software for autonomous robotic movement
- FTC team won 3rd in the state of Maryland and qualified for the Worlds / Internationals round of the competition

Math Team, *Club Cocaptain* Sept 2017 - June 2021
- Led and trained a club of 30 high school members
- Team won 1st in the County Math League

Science Olympiad, *National Competitor* Sept 2017 - June 2021
- Team won 1st place in Maryland and 26th place nationally
- Won 2nd and 4th place in Maryland in Circuit Lab and Machines, two events based on Physics Mechanics and E&M

Personal Projects

Online Board Game June 2021 - Aug 2021
- Created an online website for a popular card-based board game

- Used Javascript, HTML, and CSS to create an GUI with animations
- Can be accessed on heroku at https://secret-hitler-project.herokuapp.com/

Coronavirus App June 2020 - Sept 2020

- Wrote a coronavirus app to track how long someone was outside their house
- App posts this information into an online database
- This app was verified to work successfully on 5 different iPhones

Super Mario Brothers Game in Java March 2019 - June 2019

- Wrote from scratch Super Mario Brothers complete with death animations, gravity, and collision detection as Mario moves around the map
- It also features the ability to make its own levels and save the level to a file

SKILLS

Java, Python, Javascript / CSS / HTML, Node.js, Swift, R, C, latex