

WESLEY MAA

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EDUCATION

Palo Alto High School, Palo Alto, CA

Expected graduation June 2023

- GPA: 4.53 / 4.0
- SAT: 1590
- AP Tests: Calculus BC (5), Chemistry (5), English Language and Composition (5), US History (5), Chinese (5), Computer Science A (5), Computer Science Principles (4), Physics C (2023), English Literature and Composition (2023), Macroeconomics (2023)

Extracurricular Coursework & Programs

- Foothill College, Biology 1A-D: Principles of Cell Biology (Fall 2022)
- UMass Amherst, Linguistics 201: Introduction to Linguistic Theory (Spring 2022)
- Carnegie Mellon University, Introduction to Nanotechnology (Summer 2020)
- Stanford University, Materials Science & Engineering (Summer 2020)
- De Anza College, DMT 60A: SolidWorks (Summer 2020)
- Stanford University Logic Group, Introduction to Logic (Summer 2020)

HONORS & AWARDS

- USA Computing Olympiad, Gold Medal (2021)
- Office of Naval Research Award, Synopsys Championship Science Fair (2021)
- National Merit Scholar Semi-Finalist (2022)
- AP Scholar with Distinction (2021)
- President's Volunteer Service Award (2020)

RESEARCH EXPERIENCE

Columbia University - Spoken Language Processing Group – Intern

May 2022 – Aug. 2022

- Studied multi-modal and multi-lingual natural language processing in Professor Julia Hirschberg's lab
- Developed emotion detection models and state vector machines for dialogue analysis across English, Turkish, and Indonesian
- Processed data for the Switchboard Dialog Act Corpus

GRAB Data Science and Machine Learning Lab – Intern

Nov. 2021 – May 2022

- Developed automatic speech recognition (ASR) model and a web-based data collection platform for ASR
- Adapted ASR models to perform natural language processing for Lombard speech (neurological reflex to increase vocal efforts when speaking in noisy environments)

National University of Singapore - AI Lab – Intern

May 2021 – Oct. 2021

- Developed vision recognition system using U-Net-based convolutional neural networks to implement image semantic segmentation
- Created object recognition model capable of pixel-level object identification using Pytorch; co-developed preprocessor for training datasets in Python

UC Santa Barbara Summer Research Academy – Participant

June 2021 – July 2021

- Studied soft robotics, morphological computation, and parametric modeling for physical prototyping
- Designed and prototyped a navigation device using haptic feedback to help visually impaired individuals safely navigate in unfamiliar environments

Magnetohydrodynamic Drive – Independent Project

Sept. 2020 – Mar. 2021

- Developed MHD drive that applies Lorentz force (electromagnetic movement of conductive fluids) on seawater to create a solid-state propulsion system that minimizes acoustic noise and turbulence compared to traditional propellers
- Received 2021 Office of Naval Research Award at Synopsys Championship Science Fair

MIT Beaverworks: COVID Contact Tracing Project – Participant

May 2021 – Aug. 2021

- Developed automated COVID contact tracing system based on estimating the distance traveled by Bluetooth signals emitted by cellphones. Created a Bluetooth beacon platform and developed MATLAB algorithms based on log distance path loss models
- Achieved accuracy of 82% in real-world environments

EXTRACURRICULAR ACTIVITIES & WORK EXPERIENCE

FRC Team 8262 – Co-Founder, Co-Captain, & Driver

Sept. 2019 – Present

- Founded FRC team that was named regional semi-finalist in our first tournament; won the Rookie Game Design Award in 2021
- As Co-Captain, responsible for software, electronics, and system design
- Organized and taught robotics summer camps for students in 2020 and 2021

CNC Machining and Fabrication – Founder

Jan. 2020 – Present

- Founded machine shop to provide contract manufacturing services for local businesses and research labs. Manufacturing services include Computer Numerical Control (CNC) routers and 3D printing
- To date, we have generated over \$17k in revenues

Silicon Valley Robotics – Volunteer

Sept. 2020 – Present

- Work with the largest non-profit organization in the Bay Area focused on building a professional robotics community, including startups, companies, and research institutions
- Responsible for recruiting roboticists to speak at local conferences, writing coverage articles, and assisting regional tech start-ups with their media releases

Palo Alto Youth Commission – Member

Sept. 2020 – May 2021

- Worked with City Council to help address issues relevant to the teen community
- Helped develop youth programs, including voter registration and mental health awareness campaigns

Palo Alto High School Linguistics Club – Member

Sept. 2020 - Present

- Study computational linguistics, morphological typology, and generative grammar; work on linguistics puzzles and constructed languages (Conlang)

Maker Nexus – Volunteer

May 2020 – Aug. 2020

- During pandemic, helped manufacture and assemble over 20,000 3D-printed face shields to distribute to local hospitals, medical facilities, and community centers

Los Altos History Museum – Volunteer Docent

May 2020 – Aug. 2020

- Conducted guided tours through permanent exhibits and instructed new docents. Designed temporary exhibits examining the lives of senior citizens in Los Altos and the history of women's suffrage

TECHNICAL SKILLS

Embedded Software: National Instruments, Arduino,
Raspberry Pi, TCP/IP, Bluetooth
Languages: Java, C#, Python, Rust
Mathematics: MATLAB, Mathematica

CAD/CAM: SolidWorks (Certified), Fusion360,
Rhino/Grasshopper, 3D Printing, CNC
Web: HTML/CSS, Node JS, React, Javascript