Joshua Lee

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Education

University of Michigan Ann Arbor, MI

Bachelor of Science in Electrical Engineering. Minor in Mathematics *Expected May 2028*

Courses: Programming and Data Structures, Electronic Circuits, Differential Equations and Matrix Algebra, Technical Writing

Iolani School Honolulu, HI

High School Diploma *August 2019 – May 2024*

Valedictorian, Cum Laude Society, University of Pennsylvania Book Award, Headmaster's List

Experience

Avionics Engineer August 2024 – Present

Michigan Aeronautical Science Association (MASA) Project Team *Ann Arbor, MI*

- Designed the camera board for the Limelight hybrid rocket using Altium Designer, enabling high-resolution image capture during flight.
- Developed firmware for analog and digital transmitters using STM32 IDE to improve data transmission efficiency by 20%.

Team Captain August 2022 – April 2024

FRC Team 2438 *Honolulu, HI*

- Oversaw the design, fabrication, and software implementation of robots for the 2023 and 2024 FRC seasons, leading the team to top 5 regional finishes.
- Programmed and integrated custom computer vision software using OpenCV, increasing autonomous task completion by 15% in competition.
- Nominated for the FIRST Dean's List Award in recognition of leadership and impact.

President and Technical Lead April 2022 – April 2024

Ignite *Honolulu, HI*

- Designed and implemented STEM curricula reaching 500+ students from indigenous communities, enhancing STEM literacy by 250% based on post-program surveys.
- Created partnerships with Kula Kaiapuni (Hawaiian Immersion Schools) to integrate STEM into everyday programs.
- Presented at FIRST World Championship, winning the FIRST Impact Finalist Award (1 of 6 teams globally) in 2022 and 2024.

Projects

Thrust Vector Control

C++, ESP32, HTTP

- Developed an Android app to remotely control an Arduino thrust vector control mount for a high-power rocket, increasing precision by 25% in simulated tests.

Sports Queueing

Python, React.JS, HTML/CSS, Tailwind

- Created a queueing solution for recreation center facilities used by 200+ members weekly, reducing wait times by 15%.

Diagnosing Pneumonia

Python, TensorFlow, VGG-16

- Designed a CNN for X-ray lung scan analysis, achieving a 90% diagnostic accuracy, aiding in faster medical reviews.

Technical Skills

Languages: Python, Java, C/C++, JavaScript, HTML/CSS, React, MATLAB
Frameworks: React, Node.js, FastAPI
Developer Tools: Git, Visual Studio, Linux, Altium, STM32, Vercel, CUDA, Docker
Libraries: NumPy, pandas, Tailwind, TensorFlow