

Maddux Madayag

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EDUCATION

University of California, San Diego

Bachelor of Science in ECE: Computer Engineering, GPA: 3.76

La Jolla, CA

Expected June 2026

EXPERIENCE

Research Assistant - Isolated Power Converter Project

September 2024 – Present

iPower3Es Lab

La Jolla, CA

- Developing an isolated power converter using wireless power transfer techniques to power kV-isolated gate drivers for a 10-kV power converter for soft robots
- Implementing isolated power supply architectures and LLC converters featuring planar transformers

Avionics Engineer - Project Hayla

October 2023 – Present

Students for the Exploration and Development of Space (SEDS) @ UCSD

La Jolla, CA

- Engineering a pulley-based launch umbilical detachment system for the rocket, utilizing an AndyMark CIM motor, steel cables, and quick disconnect mechanisms to ensure reliable and efficient disconnection
- Designed a solenoid relay board for efficient and reliable rocket recovery deployment during flight
- Designed a battery management system for three LiPo batteries using the BQ76907 IC

Workshop Officer

October 2023 – Present

Keyboard Club @ UCSD

La Jolla, CA

- Taught over 90 students how to build custom mechanical keyboards through hands-on workshops, evidenced by their ability to solder and operate CNC and laser cutting machinery
- Led a one-off workshop for 16 students to assemble and wire macropads, helping students gain hands-on experience with keyboard building
- Developed firmware for Arduino Pro Micro and RP2040 controllers using QMK/C and Vial, allowing users to customize keymaps

Computer Builder

2018 – 2022

4-H Computer Project

Davis, CA

- Rebuild and donated 20+ computers to undeserved communities in Yolo County
- Led education sessions for 4-H members on assembling and troubleshooting computers, improving their technical skills

PROJECTS

Custom Designed Mechanical Keyboard | QMK, C, Autodesk Fusion360, KiCad

June 2024

- Developed a custom PCB integrating a RP2040 microcontroller by designing and assembling components, resulting in a fully functional custom keyboard
- 3D modeled a plate-mounted keyboard case in Fusion 360 for 3D printing with durability and precision ensured
- Programmed QMK/C firmware with Vial compatibility to enable personalized keymapping for end users

Bluetooth-Controlled RC Car | C/C++, Arduino

January – March 2023

- Engineered and built a functional bluetooth RC car in collaboration with IEEE @ UCSD team members, improving understanding of hardware and software integration

AWARDS

Banatao Family Scholarship, Filipino Googler Network Kapwa Mentorship Program Mentor Nomination, MarryAnn Wegner Memorial 4-H Scholarship, Yolo County 4-H Leaders Council Scholarship

TECHNICAL SKILLS

Languages: Java, Python, C/C++, HTML/CSS

Programs: KiCad, LTspice, PLECS, Ansys, MATLAB, Autodesk Fusion 360

Hard Skills: CNC Machining, Laser Cutting, Soldering, 3D Printing, Woodworking