Enoch Y. Chau

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Experience

Research Assistant | California Plug Load Research Center, UC Irvine, CA   Apr'19 – Jun'20
- Developed, refactored, and modularized firmware for IoT energy management systems.
- Trained new members by delegating project work into specific training tasks.
- Updated documentation to improve hardware and firmware maintainability for future members.

Peer Academic Advisor | School of Engineering, UC Irvine, CA   Mar'18 – Jun'20
- Researched, organized, and facilitated workshops on Engineering portfolios and study abroad.
- Advised more than 1000 students per quarter from diverse Engineering fields on academic planning.

Hardware Engineering Intern | Panasonic Avionics Corporation, Lake Forest, CA   Jun'19 – Aug'19
- Investigated hardware issues by using an Oscilloscope, a multimeter, and proprietary testers.
- Conducted FAA required testing for ESD, thermal stress, and power cycles.
- Saved Engineering hours by introducing automated power cycle testing using Python and a Raspberry Pi.
- Evaluated potential hardware components to replace obsolete SSD and RAM in avionics entertainment systems.

Projects

MCutie (personal)   Jan'21 – Now
- Developing a server for real time sensor logging using the WebSocket API, SQLite3, Express, and Node.
- Creating a web application with an intuitive user interface to visualize collected sensor data using React.
- Applying to home automation by deploying the application on a Raspberry Pi that controls IoT sensor nodes.

Mechanical Numeric Keypad (personal)   Dec'20 – Now
- Designing and fabricating a mechanical numeric keypad PCB using KiCad.
- Implementing open source keyboard firmware in C using Quantum Mechanical Keyboard Firmware.

Boulder Field (personal)   Jul'20 – Aug'20
- Suggests user-relevant climbing routes by evaluating data requested from the Mountain Project API.
- Designed a user-friendly interface using React and Material-UI components to display search results.

GPS Sound Sensor (UCI Senior Design)   Sep'19 – Mar'20
- Collaborated with a team of four to develop a sound-based location sensor and accompanying Android app.
- Paired Android app and sound sensors wirelessly using WiFi modules and MQTT protocol.
- Compared trade-offs such as processor speed and microphone sensitivity to inform design decisions.

Buddy Projects (UCI: California Plug Load Research Center)   Apr'19 – Jun'20
- Developed firmware using freeRTOS and Arduino to interface sensors using I2C, SPI, and UART protocols.
- Implemented IoT using WiFi-connected ESP32 microcontrollers and MQTT protocol.
- Debugged circuit boards by using an oscilloscope, multimeter, and firmware tests.
- Populated and repaired custom PCBs using a reflow oven, hot air, and a soldering iron.

Skills

Programming: C, C++, JavaScript, Python

Web Dev: React.js, Express.js, HTML, CSS

Firmware: freeRTOS, AVR (Arduino), ESP32/ESP8266, Raspberry Pi

Software Tools: Git, KiCAD, Excel VBA, Markdown, Microsoft Office, Google Workspace

Lab Tools: Oscilloscope, Soldering (iron and hot air), Multimeter

Operating System: Linux, Windows

Language: Conversational Mandarin Chinese with some reading and writing

Education

B.S. Electrical Engineering | UC Irvine, CA   Sep'16 – Jun'20
GPA: 3.48/4.0
Specialized in Electronic Circuit Design