Enoch Y. Chau

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Projects

Chat App (personal) Mar'21 - Now

- Creating a chat app similar to Facebook Messenger using TypeScript, Node.js, PostgreSQL, and React.js
- Maintaining project integrity at every step by writing unit tests and integration tests with Jest.js.
- Developed custom Websocket handler and tracking system for active chat groups.

Mosaic (personal) Jan'21 - Feb'21

- Mosaic is a user based full stack web app for creating and sharing randomly generated mosaic style images.
- Managed user data flow by creating a REST API web server using Node, Express, and MongoDB.
- Implemented a React based front end to create, edit and share mosaic images between users.
- Controlled authorization of users by using JSON web tokens to protect API endpoints and client side routes.

MCutie (personal) Jan'21 - Feb'21

- Developed a RESTful web server for real time sensor logging by using WebSockets, SQLite3, Express, and Node.
- Created a web application with an intuitive user interface to visualize collected sensor data using React.
- Forked the project into a cloud based deployment using the Heroku platform and PostgreSQL.
- Building IoT sensor nodes controlled by the server to monitor plant moisture and other home automation tasks.

Boulder Field (personal) Jul'20 – Aug'20

- Boulder Field recommends 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.

Buddy Projects (UCI: California Plug Load Research Center) Apr'19 – Jun'20

- Developed power management systems for office appliances to provide data for energy conservation research.
- Developed C++ firmware using freeRTOS and Arduino to interface sensors using I2C, SPI, and UART protocols.
- Created IoT-connected devices using ESP32 microcontrollers and MQTT protocol to interface with a home energy management server backend.
- Saved over $50 per PCB by populating and repairing custom PCBs using a reflow oven, hot air, and soldering.

Experience

IoT Research Assistant | California Plug Load Research Center, UC Irvine, CA Apr'19 – Jun'20

- Developed firmware and debugged hardware for IoT energy management systems.
- Modularized a complex firmware program into understandable chunks by splitting code and updating documentation to improve readability and maintainability for future members.
- Trained new members by delegating project work based on each individual's strengths and weaknesses.

Hardware Engineering Intern | Panasonic Avionics Corporation, Lake Forest, CA Jun'19 – Aug'19

- Investigated hardware issues by using an oscilloscope, a multimeter, and proprietary test machines to provide data for engineering reports.
- Verified Federal Aviation Administration safety requirements using ESD, thermal stress, and power cycle tests to identify and replace potentially hazardous hardware in airplanes.
- Evaluated potential hardware components to replace obsolete SSD and RAM in avionics entertainment systems by analyzing datasheets and creating Linux test scripts.
- Saved over 100 Engineering hours by introducing automated power cycle testing using Python and Raspberry Pi.

Education

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

Skills

- **Programming:** JavaScript, TypeScript, C, C++, Python
- **Web Technologies:** React.js, Express.js, SQL, MongoDB, HTML, CSS
- **Software Tools:** Git, Jupyter Notebook, Markdown, Visual Basic, Microsoft Office, Google Workspace, KiCAD
- **Language:** Conversational Mandarin Chinese with some reading and writing