AARON LAM

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EXPERIENCE

Software Engineer 2 | Veranex/Fusion Biotec Inc. April 2022 - Present

- Leading development of backend and frontend for mobile app that handles recording and displaying oxygen readings for users. App displays graphs for users to monitor their oxygen levels. Talks to oxygen monitoring device over Bluetooth and sends data to cloud server. Approximate user base of 1000+ users. Written in Dart and Flutter.
- Contributing to backend and frontend development of web application that handles monitoring and graphing users' oxygen readings. Handled viewing, sorting, filtering, and retrieving users and their associated oxygen data. Approximate user base of 1000+ users. Written in TypeScript using ReactJS and NextJS libraries.
- Contributing to backend development of Azure cloud server that handles monitoring oxygen readings for users. Implemented pagination of data and added as well as modified routes for API. Approximate user base of 1000+ users. Written in Python using FastAPI libraries and Azure cloud services.
- Lead development of prototype Bluetooth implantable device and associated iOS mobile app. Implantable is embedded device that communicated over Bluetooth, controlled a motor, and self-monitored its battery life. Mobile app had motor control and would be used to calibrate as well as view data. Firmware written in C/C++ using STM32 WB libraries. iOS mobile app written in Swift.
- Created backend and frontend for firmware on an embedded device. Logic for handling simulation was written in C/C++ and host that would be able to modify variables that the simulator would use written in Python with PyQt library. Internal tool to speed up firmware development when hardware was unavailable to use (saved approximately a month worth of stagnation). Written using C/C++ and Python.
- Lead verification testing to verify and validate a medical device. Created test scripts in C that communicated with the medical device's communication backend and generated reports. Started integration of test scripts with HIL system. Performed static code analysis and wrote reports regarding warnings and issues found.
- Lead development of embedded touch display user interface. Wrote up driver for embedded touch display that displays the user interface, handles touch events from user, and saves/loads assets from FLASH. Driver and user interface written in C/C++ using STM32 libraries and STM32 TouchGFX.
- Designed and implemented various firmware drivers and control application(s). Drivers include NFC reader and writer, EEPROM storage, various drivers for controlling hardware components, ADC drivers for data collection and monitoring, and Bluetooth drivers. Firmware written in C++ with application(s) written in Python using PyQt libraries.
- Lead, taught, and mentored other software engineers and interns about embedded concepts, software libraries, and system design.

Software Engineer | Veranex/Fusion Biotec Inc. November 2021 – April 2022

- Updated communication between embedded devices and PC applications to allow for multiple devices to be communicated to at the same time. Applications created using Python and PyQt libraries. Firmware created using C/C++.
- Implemented encryption and key exchange between PC applications and embedded devices. Host created using Python and PyQt libraries. Embedded implementation in C/C++.

SKILLS

Programming Languages

Python, C++, C, Dart, JavaScript/JSX, TypeScript, HTML, CSS, SQL, Rust, Dart, Unix/Bash, Java, C#, Swift

Frameworks & Libraries

Qt/PyQt, Flutter, React, Angular, STM32, JQuery, NodeJS, Flask, SocketIO, PyGame

Software & Infrastructures

Linux, Git, iOS, Android, Figma, Docker, JIRA, TouchGFX, STM32 Cube, Unity

EDUCATION

University of California, Irvine September 2018 – December 2021

Bachelor of Science in Computer Science | Specialization in Visual Computing | Dean's Honor List