Eric **Truong**

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Objective

Searching for an opportunity to work on low-level software that interacts closely with the hardware it's running on. I'm especially interested in working with operating systems.

Education

University of California, Santa Cruz

Santa Cruz, CA

Bachelor of Science in Computer Engineering, Minor in Computer Science

Sept 2018 - June 2022

- **Concentration:** Systems Programming
- **GPA:** 3.88/4.0
- **Relevant Coursework:** Computer Systems/Assembly Language, Intro to Data Structures and Algorithms, Abstract Data Types, Computer Systems and C Programming, Logic Design, Computer Architecture, Intro to Networking, Embedded System Design, Technical Writing, Principles of Computer Systems Design, Network Programming, Advanced Programming, Introduction to Software Engineering, Engineering Design Project

Relevant Skills

Languages	C (4 years), C++ (3 months), Python (6 months)
Miscellaneous	Git (5+ years), Makefile (4 years), Unix (4 years)

Projects

Simple Two Channel Oscilloscope

Santa Cruz, CA

Embedded Systems Design

Sept 2021 - June 2021

- Displayed wave-forms and frequency readings onto an LCD screen. Supported vertical and horizontal scaling.
- Read voltage values on 2 GPIO pins using an ADC. Data points are transferred from the ADC buffer to ping-pong buffers via DMA.
- Processing is done on the ping-pong buffers to calculate the frequency, select appropriate data points to render, and detect triggers.
- User input enabled through knobs and command line. Knobs are potentiometers monitored by the ADC. Command line communicates over UART and is parsed on the microcontroller.
- Designed for the PSoC-6 microcontroller and written in C.

Pintos Modification Labs

Santa Cruz, CA

Principles of Computer Systems Design

Jan 2022 - March 2022

- Improve and implement aspects of the Pintos operating system including the ability to block threads, priority-based thread scheduling, and priority donation.
- Dealt with multi-threading and used concurrency primitives. Also, implemented condition variables and locks into Pintos using the OS's semaphore implementation.
- Written in C. Version control with Git. Debugging done with GDB.

PLUX: Smart Outlet

Santa Cruz, CA

Engineering Design Project

Jan 2022 - Present

- Worked on a team to create an IoT device that plugs into an outlet and allows for remote control and monitoring of power consumption.
- Programmed an ESP 32 to send connect to WiFi and publish/receive MQTT messages in C++ (via Arduino IDE).
- Used Python to create an MQTT client that parses messages and writes to an SQLite3 database on an Oracle Cloud instance.
- Designed the architecture and protocol for sending messages between the smart plug, server, and web-client.

Unnamed Bus System Project

Santa Cruz, CA

Not affiliated with UCSC

Jan 2021 - Present

- Contributed to the creation of an integrated hardware and software system to track a transit bus's position and route, as well as provide a console for the bus driver to interact with the system.
- Designed and wrote the program flow for the Driver Console in C. Uses a simplified state-machine design pattern that makes use of function pointers to encapsulate each state.
- Use CMake to cross compile for RP2040 on the Raspberry Pi Pico.

Work Experience

UC Santa Cruz

Santa Cruz, CA

Embedded Systems Design Lab Tutor

Sept 2021 - Nov 2021

- Led 3 lab sections a week with 1-2 other tutors.
- Assisted around 20 students each section on their lab by answering questions and doing light debugging.
- Performed check-offs and graded submissions.

San Jose Eyecare

San Jose, CA

Optometric Technician

June 2016 - Sept 2021 (Summers)

- Operated diagnostic equipment.
- Authorized and checked coverage of patient insurance.
- Scheduled appointments, took calls, handled pickups, and other front-desk tasks.