Eric **Truong**

Cupertino, CA

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Computer Engineer

Interested in writing low-level software and learning about what goes on underneath the hood. Currently interested in learning about operating systems and working on embedded systems. Dedicated to writing readable and efficient code.

Skills

Languages	C (4 years), Python (1 year), C++ (3 months), Assembly for MIPS32 (3 months) JavaScript (3 months)
Web Dev	React (3 months), Express, Oracle Cloud, Nginx, Certbot
Miscellaneous	Git (6+ years), Unix (5 years), Makefile (4 years), Bash (6 months), PuDB, MQTT, SQLite3

Work Experience

Western Digital Corporation

Milpitas, CA

Software Engineer

August 2022 - May 2023

- Perform initial failure analysis/triage of automated tests every morning and create/update Jiras for the relevant teams.
- Modify/port Continuous Integration scripts.
- Run tests on drives and report results (pass/fail, error message, etc.)
- Bring up lab systems, including bench machines and Raspberry Pis.

UC Santa Cruz

Santa Cruz, CA

Embedded Systems Design Lab Tutor

September 2021 - November 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 providing guidance for 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.

Education

University of California, Santa Cruz

Santa Cruz, CA

Bachelor of Science in Computer Engineering, Minor in Computer Science

September 2018 - June 2022

- **Concentration:** Systems Programming
- **GPA:** 3.86/4.0
- **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, Signals and Systems, Technical Writing, Principles of Computer Systems Design, Network Programming, Advanced Programming, Introduction to Software Engineering, Engineering Design Project

Projects

Simple Two Channel Oscilloscope

Santa Cruz, CA

Embedded Systems Design

September 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.

Quadruple Software UART

Santa Cruz, CA

Embedded Systems Design

September 2021 - June 2021

- Optimization exercise to implement four UARTs in software and on just the CM4 core.
- UARTs operated concurrently as tasks in FreeRTOS.
- Written in C for the PSoC-6 microcontroller.

Pintos Modification Labs

Santa Cruz, CA

Principles of Computer Systems Design

January 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

January 2022 - June 2022

- 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 connect to WiFi and publish/receive MQTT messages. Programmed in C++ with the 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

January 2021 - June 2022

- 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.

BAM! File Sharing Web App

Santa Cruz, CA

Introduction to Software Engineering

March 2022 - June 2022

- Worked on a Scrum team as Product Owner and followed Scrum principles.
- Is a web app that allows devices to share files by fist-bumping. Files are sent peer-to-peer via WebTorrent.
- Designed and wrote the back-end architecture and the logic for connecting two clients and sending files.
- Built with React, Express, and NodeJS.

Reliable File transfer protocol

Santa Cruz, CA

Network Programming

January 2022 - March 2022

- Created and implemented a protocol for reliable data transfer between a server and client via UDP.
- Can handle multiple clients concurrently.
- Improved performance by using a sliding window and buffering out of order packets.

Honors

Fall 2022 **TBP**, Tau Beta Pi Member *Santa Cruz, CA*