

# 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:** 3.86/4.0
- **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, 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

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### 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.