

Education

Irvine, California **University of California,
Irvine** **2016 – 2020**

- B.S. in Computer Science and Engineering. GPA: 3.92/4.00 (Magna Cum Laude)

Fullerton, California **California State University,
Fullerton** **2021 – January 2024**

- M.S. in Computer Science. GPA: 4.00/4.00

Technical Skills

- Programming Languages: C++, C, Python
- Hardware: Arm Cortex-M4, Serial Communication Networks, Motors, Digital Logic Analyzer, Oscilloscope
- Frameworks, Environments, and Tools: Linux OS, Robot Operating System (ROS), STM32CubeIDE, FreeRTOS, Git, KiCAD

Projects

Violin Trainer Device **March 2022 – May 2022**

- Created an interactive violin trainer on the STM32-L467RG Nucleo board where the user would play on a violin-like device in tandem with a song, recording how accurate his or her intonation is
- Interfaced with multiple peripherals such as a Soft Membrane Potentiometer to mimic the strings of a violin, ADC, DAC, DMA, UART, and LEDs

Few-shot Time Series Forecasting Research **March 2022 – August 2022**

- Developed a novel Siamese Neural Network model with the Keras library, which forecasts vehicular traffic from the Caltrans Performance Measurement System using only a limited, one-week's worth of historical data
- Improved forecast predictions compared to other models such as ARIMA and Nearest Neighbor
- Research paper published and presented to the IEEE 23rd International Conference on Information Reuse and Integration (IRI 2022)

Computer Vision with Google's EdgeTPU **October 2022 – December 2022**

- Led a team of three students to prototype a device that would aid people with visual impairment
- Preprocessed a dataset of 22,210 indoor scene images using Sci-kit Learn and OpenCV
- Trained a tensorflow-lite semantic segmentation model to distinguish walkable and obstructed areas
- Deployed our model on the EdgeTPU hardware, which reduced inference times from 1200ms on an Intel i7 CPU to 57ms, making real-time application feasible

Titan Rover: Robotic Arm Controller **October 2022 – Present**

- I was solely tasked on overhauling the robotic arm controls system for the university's rover club, transitioning from Pyboards to STM32F446RE microcontrollers with FreeRTOS
- Used the CAN protocol to control 4 stepper motors, 1 linear actuator, and 1 BLDC motor with quadrature encoders for feedback in an event-driven process
- Debugged using the STM32CubeIDE Debugger, PulseView Logic Analyzer, and Siglent Oscilloscope
- Participated in meetings involving other disciplines such as electrical and mechanical engineering and computer science; being mindful of concerns, resource allocation, and integration

Work Experience

Retail (20+hours/week)

Walmart

September 2021 – Present

- Working part-time in a timed and high-pressure environment, acquiring and dispensing online grocery orders for over one hundred customers per day
- Closing shift: entrusted to complete operations when the department team lead and manager are off duty or not present