

Education

University of California, Santa Cruz

September 2013 – June 2017

Bachelors of Science with Honors in Computer Engineering with a focus on Digital Hardware.

Significant Course Work:

- Digital Signal Processing
- VLSI Digital System Design
- Microprocessor System Design
- Logic Design with Verilog
- Analog Circuits
- Computer Architecture

Experience

Sit/Stand Desk Personal Project

August 2017 - Present

- Designed and built a desk that can move up and down using an Arduino based embedded system that controls two linear actuators and a user interface (LED buttons and an LCD screen).
- Programmed a manual mode for the user to control the desk, an automatic mode where the user can specify a time interval for the desk to alternate between two heights, and the ability to save presets.
- Filtered out unwanted RF produced by the motors in the linear actuators.

Computer Science Database Systems II Staff

April 2017 – June 2017

Tutor and Grader

UC Santa Cruz

- Graded assignments for Professor Sheldon Finkelstein's Database Systems CS capstone course.
- Tested student's implementation of database systems using C++ test benches.
- Assisted students with questions regarding C++ and course concepts.

RT-2M Replacement Senior Design Project

January 2017 – June 2017

Lead DSP Engineer

Plantronics

- Interdisciplinary senior design project that maintained a professional relationship with Plantronics through biweekly progress evaluations.
- Designed LabVIEW software for the NI cRIO to replace Plantronics' outdated audio test equipment.
- Utilized event driven, object oriented, and multithreaded LabVIEW code for a robust software architecture.
- Engineered Digital Signal Processing algorithms for crest factor optimization, calibration, and audio signal generation and analysis.
- Successfully provided Plantronics with a working prototype of an RT-2M replacement tester.
- Worked in a team of six.

Leeps Lab Research Intern

December 2015 – December 2016

Lead Software Engineer

UC Santa Cruz

leeps.ucsc.edu

- Worked under Professor Kristian Vargas Lopez on a behavioral economics project.
- Developed a facial recognition program to determine and log the emotional state of a subject.
- Programmed using Affdex, Boost, and OpenCV C++ SDKs in a Linux environment.
- Utilized Shimmer Sensors to log heart rate (PPG) and skin conductance (GSR) data.
- Configured pilot experiments involving collecting data from student volunteer subjects.

Skills

5 years: Microcontroller/FPGA embedded system programming (NI cRIO, Cypress PSoC5, Xilinx FPGA, Arduino)

5 years: Git for large scale version control and project development

4 years: C/C++ systems programming (Embedded Systems, OpenCV, Boost, Affdex)

3 years: Digital and Analog circuit design and analysis

2 years: Hardware synthesis and VHDL (Verilog, System Verilog)

2 years: Digital Signal Processing

2 years: Matlab, Python, and Java programming

1 year: LabVIEW (OOP, Event Driven, Multithread, RTOS, FPGA) with the NI cRIO