

Education

University Of Michigan – Ann Arbor: Computer Engineering 05/2020

GPA: 3.938 / 4.0 University Honors, Dean's List

Coursework: Data Structures & Algorithms, Intro Computer Architecture, Intro Logic Design,
Intro Signals & Systems, Microprocessor Toys, Discrete Math, Intro Circuits

Skills: C++, C, Verilog, Assembly (x86 & ARM), Python, Matlab, Git, LTSPICE

Work History

System Security Intern | C, Bash, Assembly 05/2018 to 08/2018
Marvell Semiconductor – Marlborough, MA

- Enabled an enterprise SSD controller to boot over Quad-SPI, doubling memory transfer speed.
- Ported a WiFi Microcontroller BootRom over to GCC toolchain and automated build process with CMake.
- Composed memory map of code, data, stack, and heap segments in a linker script and wrote startup code to place exception vector table, enable cache, start timers, and initialize data and bss.

Engineering Intern | C++ 04/2017 to 07/2017
Intent Design – Farmington Hills, Michigan

- Led a team in building a propeller thrust bench to determine feasibility of suspending a 15kg device.
- Interfaced a microcontroller with load cell, speed controller, and current sensor to analyze thrust and power consumption at various RPM.

Project Experience

Michigan Neuro-Prosthetics – Electronics Lead | C++ 09/2016 to Present

- Led a sub-team of 14 and collaborated with other leaders in creating the electronics for a 3D-printed prosthetic arm actuated by user's muscle activity.
- Refactored signal processing algorithm to use machine learning to allow control of the device with custom gestures.
- Currently integrating mobile app to supervise real-time training of neural net and modify user settings.

IOT Home Security Suite | Python, C++ 12/2018 to 01/2018

- Developed door access control system to verify entries with facial recognition and RFID tags.
- Designed a camera to automatically detect and photograph personnel from nearby detected movements.
- Implemented projects using a raspberry pi and a microcontroller in conjunction with various IO and peripherals.
- Used Google Vision API, AWS for image processing and MQTT, email, and NoSQL database for message passing and data logging.

Custom Processor Simulation & Assembler | C, Verilog, Assembly 01/2017 to 04/2017

- Defined several instructions and datapath in RTL for a custom processor simulated on an FPGA.
- Wrote assembler and linker for the simplified assembly language for ELF format.
- Interfaced the FPGA with camera and H-Bridge to augment an RC car to follow a colored line, with all drivers and algorithms written in RTL or assembly.

Extracurriculars

- Eta Kappa Nu (Honor Society of IEE) – Member
- International Baccalaureate Diploma – Recipient
- Middle School Technology Club - Founder
- Michigan Club Wrestling - Member