Frank Lee

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EDUCATION

Carnegie Mellon University **Pittsburgh, Pennsylvania** **Graduation date: May 2020**
M.S. in Electrical and Computer Engineering with Concentration in Embedded Systems *GPA **3.6/4.0***

University of California, Davis **Davis, California** **Graduation date: June 2019**
B.S. in Electrical Engineering with Concentration in Analog and Digital Circuits, *GPA **3.4/4.0***

PROJECTS

ARM-based Real-Time Kernel **Pittsburgh, Pennsylvania** **January 2020 – May 2020**

- Architected and built a multi-threaded Real Time Operating System on an ARM-based STM32 microcontroller while implementing context switching, mutexes, and enforced fixed priority scheduling
- Utilized Memory Mapped I/O (MMIO) to build an I2C driver and an interrupt-based UART driver to output data onto a 7-segment display (I2C slave) and a Serial Monitor (UART)
- Heavily used GDB to consistently monitor 32-bit registers, stack, and memory addresses to ensure correct behavior
- Differentiated between user program and kernel by using System Calls to limit the user's access to reserved memory

WORK EXPERIENCE

Cerebras Systems **Sunnyvale, California** **Jan 2020 – Present**
Embedded Software Engineer

- Working with the system hardware team to develop the embedded software to manage a server system
- Developing user facing CLI and APIs to be used by the system administrator to interact with the server
- Working with an embedded Linux environment with open-source as well as custom in-house software components

Yinzcam **Pittsburgh, Pennsylvania** **May 2020 – July 2020**
Embedded Systems Engineer Intern / Hardware and Firmware lead (Athletech group)

- Created a proof-of-concept board that can measure biophysical traits in real-time to monitor an athlete's performance
- Developed a custom PCB with a microcontroller, battery circuits, and 5~6 sensors using Autodesk Eagle while meeting high level functional requirements
- Designed the firmware for an ARM-based microcontroller by configuring the pins to match the required set of peripherals and writing industry-standard embedded C using a modern Integrated Development Environment (IDE)

Texas Instruments **Santa Clara, California** **June 2019 – August 2019**
Digital Design Engineer Intern (High Speed Signal Conditioning group)

- Designed and verified a Verilog RTL code to be integrated with TI's new PCIe Retimer chip
- Discussed with other designers to integrate more features that will be useful to the chip and conducted an in-depth research to analyze chip architecture tradeoffs to ensure spec compliance and superior performance at a competitive cost

RMI Institute **Davis, California** **June 2018 – September 2018**
Electrical Engineering Intern

- Developed an embedded system design that can convert industrial pressure sensors' digital signal into a data server with visual displays

OSIsoft **San Leandro, California** **June 2017 – September 2017**
Customer Support Engineer Intern

- Created a system that monitors and visualizes a bus's engine and GPS data by implementing connections between different devices in an unprecedented manner while preventing many accidents during the one year of operation
- Invited to OSIsoft PI World Conference 2018 to present project at the Academic Symposium (Link to the video)

SKILLS

- Programming: Embedded C, Verilog, C, Kernel Programming (I2C, UART), ARM Processors/Assembly, Agile, Python
- Software Applications: Code Composer Studio, GDB, Cadence Simvision/IMC, Autodesk Eagle, Saleae Logic
- Characteristics: Fast Learner, Punctual, Determined, Curious, Organized, Helpful, Patient