Aashir Farooqi

(949)-226-9612 | afarooqi@ucdavis.edu| https://github.com/AashPointO

Education

University of California, Davis **Fall 2016 - Summer 2020**

Major: Computer Engineering, B.S
GPA: 3.4
CS Coursework: Algorithm Design & Analysis, Applied Linear Algebra, Operating Systems, Networks.
EE Coursework: Embedded Systems, Digital Systems, Circuits, Signal Processing.

Experience

Firmware & Hardware Engineer - Research Assistant **April 2018 - June 2020**
Miller Lab (*millerlab.faculty.ucdavis.edu*) **Auditory Neuroscience & Speech Recognition Lab**

- Independently brought up, prototyped, and delivered C code in a real time embedded environment, as an efficient solution to cross reference external audio inputs with an EEG acquisition system. Leveraged low-overhead data structures and developed linear time algorithms to improve efficiency, alongside emphasizing maintainability by introducing a large amount of code modularity. Brought latency down from the previous iteration by a factor of 10.
- Built a custom Linux distribution and cross-toolchains using the Yocto Project, by understanding both the architectural design of the target embedded system, alongside the architectural design of the host system.
- Utilized Python scripting for tests in a Linux environment, alongside extensive amounts of hardware testing using lab equipment, such as Oscilloscopes, Logic Analyzers, Multimeters, and Function Generators.

Software Engineer - Intern **June 2018 - August 2018**
General Atomics **EMS - Software and Controls**

- Leveraged object-oriented and algorithm design principles in an agile software development team environment, to convert the code base for an aircraft landing from MATLAB to C++, bringing the runtime of the simulation down by a factor of 2. Despite tight time constraints and minimal assistance, I earned the "MVP" award for saving "hundreds of hours in simulation time and greatly reducing control system tuning efforts".
- Wrote unit tests to validate the software simulation.

Projects

Smart Dog Collar *Relevant Course Project* *C & Verilog* **Fall 2019 & Winter 2020**

- Wrote C code in a real time embedded environment, with peripheral interfacing using SPI, I^2C, and UART, to track ambient noise, and cycle between different power modes for the SoC and peripherals.
- Brought up and assembled boards based on hardware requirements of the embedded system and external peripherals. Tested and validated the boards using typical lab equipment, such as Multimeters, Logic Analyzers, and Oscilloscopes.

Operating Systems *Relevant Course Project* *C++* **Spring 2020**

- Wrote C++ code to implement the functionality of a Linux based Operating System, including the development and implementation of preemptive threading, alongside writing a Linux device driver for a FAT16 file system.

Mobile Applications (IOS): *Round 'a Bound*, *Tic-Tac Emoji* *Swift* **Winter 2017 & Spring 2018**

- Successfully delivered the products through their full life cycle, by utilizing different APIs to detect physics collisions, exhibiting independently made animations and sound, and incorporating an online leaderboard via a real time database. While formerly published, the apps culminated in over 250 downloads.

Website: *aashpointo.github.io/KmapWebsite* *HTML/CSS & JavaScript* **Winter 2018**

- Implemented the Quine-McCluskey algorithm in JavaScript to compute the *Sum of Products* and *Product of Sums* from a set of truth-table inputs.

Technical Skills

- **Proficient:** C/C++, MATLAB, Python, Bash, RISC-V.
- **Familiar:** Java, Rust, Swift, R, LaTeX.