Aashir Farooqi

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Education

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

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

Experience

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

- Independently brought up, prototyped, and developed a real-time embedded solution to cross-reference external audio inputs with an EEG acquisition system by writing embedded firmware code in C onto a microcontroller and designing/assembling a custom hardware, single-bit ADC circuit. Brought latency down from the previous iteration by a factor of 10. Wrote extensive software documentation and software requirements for code written.
- Wrote Bash shell scripts and Python scripts for tests, alongside basic network troubleshooting in a Linux environment.
- Built a custom, real-time embedded Linux distributions and cross-toolchains using the Yocto Project, by understanding the underlying hardware requirements of the target embedded system, and host system.

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

- Leveraged object-oriented and algorithm design principles 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".

Projects

Smart Dog Collar *Senior Design Project* *C & Verilog* **Fall 2019 & Winter 2020**

- Designed multiple finite state machines based on different power modes of the sensors, which were implemented in a combination of Verilog, and embedded C.
- Wrote embedded firmware code in C and HDL code in Verilog onto Cypress's Programmable-SoC.
- Implemented a BLE module for wakeup interrupts and data transfer from a mobile application to our device.
- Communicated with external sensors using low level communication protocols, including SPI, I^2C, UART, and I^2S.
- Designed/assembled multiple iterations of custom hardware PCBs in Altium, and conducted hardware level debugging.

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

- Implemented UI programming using the Spritekit API to detect physics collisions between nodes and to exhibit independently made animations and sounds.
- Incorporated an online leaderboard via a realtime database through Google's Firebase API.
- Apps originally published and reviewed on the App Store, culminating 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++, Verilog, MATLAB, Bash, RISC-V.
- **Familiar:** Python, Java, Rust, Swift, R, LaTeX.