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 took the initiative to develop a real-time solution to cross-reference external audio inputs with an EEG acquisition system by writing embedded firmware code in C and designing/assembling a single-bit ADC circuit. Brought latency down from the previous iteration by a factor of 10.
- Implemented an eye-tracking system in MATLAB by teaching myself how to communicate with external peripherals over TCP. Required for use in our behavioral studies.
- Worked in Linux environment using git for version control and writing Bash scripts for occasional test script generation, file management, and automation of tasks.

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

- Brought the runtime of the aircraft landing simulation down by a factor of 2 by converting portions of the codebase from MATLAB to C++, and leveraging algorithm design techniques. Despite tight time constraints and minimal instruction, I earned the "MVP" award for saving "hundreds of hours in simulation time and greatly reducing control system tuning efforts".
- Validated my simulations by utilizing the Catch testing framework, incorporating a Test-Driven Development methodology, and utilizing Object Oriented Design principles.

Projects

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

- 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 peripherals such as MEMS mics, accelerometers, and gyrometers through I^2C, I^2S, SPI, and UART.
- Designed/assembled multiple iterations of PCBs in Altium.

IOS Games: *Round 'a Bound*, *Tic-Tac Emoji* *Swift* **Winter 2017 & Spring 2018**

- Utilized 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 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.