Aashir Farooqi

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Education

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

B.S. Computer Engineering

GPA: 3.4

Technical Skills

Programming/Markup Languages:
C/C++, Rust, Bash, RISC-V,
Verilog, HTML/CSS, MATLAB,
Python, Java, JavaScript, LaTeX.

Technological Environments/Libraries:
SPICE, Linux/UNIX, ModelSim,
Vim, Android Studio, Quartus,
Git, EAGLE, Altium.

Experience

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

- Independently brought up, prototyped, and implemented a hybrid hardware/firmware solution to cross-reference external audio and serial data inputs, with our EEG acquisition system in real-time. Brought latency down from the previous iteration by a factor of 10.
- Wrote a Python to MATLAB wrapper which grabs the gaze angle from our eye-tracker through the Lab Streaming Layer API. Designed as a proof of concept to be incorporated into future studies which will require eye tracking data.
- Wrote embedded firmware code, created hardware schematics, and designed/assembled multiple PCBs in EAGLE.

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

- Converted mathematical intensive algorithms of the aircraft landing simulation from MATLAB to C++, bringing the runtime of the simulation down by over a factor of 2. My conversion is now used in research and development of the actual aircraft landing system contracted for the world's most expensive aircraft carriers.
- Only intern in department of over 20 to earn "MVP" award for saving "hundreds of hours in simulation time and greatly reducing control system tuning efforts".

Projects

Operating Systems Course Projects: *C/C++ & UNIX Command Line* **Spring 2020**

- Implemented multiple OS functionality right outside the kernel, such as writing a basic UNIX shell in C, preemptive scheduling of different processes, support for multi-threaded safe variables, and replicating an OS's management of a FAT16 file system.
- Refined my ability in utilizing the GNU Debugger in debugging multi-threaded processes.

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

- Wrote embedded firmware and HDL code onto Cypress's PSoC. Incorporated 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, and SPI.
- Refined skills in hardware debugging through use of multimeters, logic probes, and an oscilloscope
- Designed multiple iterations of PCBs through Altium, which I assembled through use of soldering irons and hot air stations.

IOS Games (Formerly Published): *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, which parses through JSON data.