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/embedded system 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 embedded firmware code, created hardware schematics, and designed/assembled/debugged multiple PCBs.

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 performance optimization is now used in research and development of the actual aircraft landing system contracted for the world's most expensive aircraft carriers.
- Implemented software principle of Test-Driven Development, including custom unit tests to verify my simulation.
- Only intern in department of over 20 to earn "MVP" award for saving "hundreds of hours in simulation time, greatly reducing control system tuning efforts".

Projects

Relevant Course Projects : *C/C++, Verilog, RISC-V & Linux* **Fall 2019 - June 2020**

- Implemented multiple Linux operating system functionality right outside the kernel, such as preemptive scheduling of different processes and support for multi-threaded safe variables.
- Configured an embedded system in C to interact with Amazon Web Services alongside a weather API for automated control of a fan using an IR emitter, and display onto an OLED via SPI.

Senior Design Project (Embedded Systems): *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. Included sensors with redundant functionality, to ensure a fault-tolerant product.
- Refined skills in hardware debugging through use of multimeters, logic analyzer, 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 display independently made animations and sounds.
- Incorporated an online leaderboard via a realtime database through Google's Firebase API, which parses through JSON data.