

# 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

**Embedded/Hardware Engineer - Research Assistant**

April 2018 - June 2020

Miller Lab ([millerlab.faculty.ucdavis.edu](http://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 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 Engineer - 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

**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 gyroscopes through I<sup>2</sup>C, I<sup>2</sup>S, and SPI.
- Designed and assembled multiple iterations of PCBs through Altium, which incorporated the PSoC, external sensors, and a rechargeable battery.

**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, which parses through JSON data.
- Both originally published and reviewed on the App Store, culminating in over 250 downloads.

**Website:** [aashpointo.github.io/KmapWebsite](http://aashpointo.github.io/KmapWebsite) HTML/CSS & JavaScript

Winter 2018

- Incorporated the Quine-McCluskey method to output the *Sum of Products* and *Product of Sums* equations from a set of truth-table inputs.
- Unlike other K-Map Generating websites, mine allows for multiple outputs, an algorithm which is scalable up to an arbitrary number of bits, and a dynamically sizing table through incorporation of JavaScript.