

# Aashir Farooqi

(949)-226-9612 | [afarooqi@ucdavis.edu](mailto:afarooqi@ucdavis.edu) | <https://github.com/AashPointO>

## 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](http://millerlab.faculty.ucdavis.edu))

Auditory Neuroscience & Speech Recognition Lab

- Developed 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, and writing a Python to MATLAB wrapper. Required for use in our behavioral studies.

**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 assistance, I earned the "MVP" award for saving "hundreds of hours in simulation time and greatly reducing control system tuning efforts".
- Validated my simulations by implementing a Test-Driven Development methodology, and designed my code using 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<sup>2</sup>C, I<sup>2</sup>S, 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](http://aashpointo.github.io/KmapWebsite) HTML/CSS & JavaScript

Winter 2018

- Implemented Quine-McCluskey algorithm to compute the *Sum of Products* and *Product of Sums* from a set of truth-table inputs.
- Utilized Javascript to dynamically resize the truth-table for a given input parameter.

## Technical Skills

---

- **Proficient:** C/C++, Verilog, MATLAB, Bash, RISC-V.
- **Familiar:** Python, Java, Rust, Swift, R, L<sup>A</sup>T<sub>E</sub>X.