

# Aashir Farooqi

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## Education

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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

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**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**

- Independently brought up, prototyped, and 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.
- Taught myself networking principles, such as TCP/IP communication, to communicate with an external eye-tracking system for use in behavioral studies.

**Software Engineer - Intern**

June 2018 - August 2018

General Atomics

**EMS - Software and Controls**

- Leveraged object-oriented and algorithm design principles to convert the code base for an aircraft landing from MATLAB to C++, bringing the runtime of the simulation down by a factor of 2. 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".

## Projects

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**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](https://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

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