

Aashir Farooqi

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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)

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. 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 utilizing the Catch testing framework, and incorporating a Test-Driven Development methodology.

Projects

Senior Design Project: *Smart Dog Collar* C & Verilog

Fall 2019 & Winter 2020

- Wrote embedded firmware and HDL code onto Cypress's PSoC.
- 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 gyroscopes through I²C, I²S, SPI, and UART.
- Designed/assembled multiple iterations of PCBs through 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 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^AT_EX.