SHARIQ HAFEEZ

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Education

University Of Michigan – Ann Arbor: Computer Engineering 05/2020

GPA: 3.974 / 4.0 University Honors, Dean's List

Coursework: Data Structures & Algorithms, Intro Computer Architecture, Intro Logic Design, Intro Signals & Systems, Microprocessor Toys, Discrete Math, Intro Circuits

Skills: C++, C, Verilog, Assembly (x86 & ARM), Python, Matlab, Git, LTSPICE

Work History

System Security Intern 05/2018 to 08/2018
Marvell Semiconductor – Marlborough, MA

- Enabled an enterprise SSD controller to boot over Quad-SPI, doubling memory transfer speed.
- Ported a WiFi Microcontroller BootRom over to GCC toolchain and automated build process with CMake.
- Composed memory map of code, data, stack, and heap segments in a linker script and wrote startup code to place exception vector table, enable cache, and initialize data and bss.

Engineering Intern 04/2017 to 07/2017
Intent Design – Farmington Hills, Michigan

- Led a team in building a propeller thrust bench to determine feasibility of suspending a 15kg device.
- Interfaced a microcontroller with load cell, speed controller, and current sensor to analyze thrust and power consumption at various RPM.

Project Experience

2 Factor Authenticated Door Lock 01/2018

- Developed an access control system to verify entries with facial recognition and RFID tags.
- Archived pictures of unauthorized users or stolen tags and recorded data in a NoSQL database.
- Hosted code in AWS framework and managed a Raspberry Pi with their MQTT broker.

Michigan Neuro-Prosthetics – Hardware Lead 09/2016 to Present

- Collaborated in producing a 3D-printed hand that has motors actuated by user's muscle activity.
- Implemented a sleep-mode in the control system to increase battery life by 4 hours and reduce battery size.
- Currently piloting classification of signals by frequency analysis through an artificial neural net.

Low Power Security Camera 12/2017

- Designed a camera to automatically detect and photograph personnel from nearby detected movements.
- Wrote a serial protocol for LED drivers and toggled them appropriately in low-light conditions.
- Utilized Google Vision API to filter images before sending security update emails with photo evidence.

ENGR 100 Microprocessor Toy 01/2017 to 04/2017

- Upgraded an RC car with a camera to allow it to follow a distinctly colored path.
- Interfaced an FPGA with an H-Bridge and camera, with drivers and algorithm written in assembly.

Extracurriculars

- Eta Kappa Nu (Honor Society of IEE) – Member
- Middle School Technology Club - Founder
- International Baccalaureate Diploma – Recipient
- Michigan Club Wrestling - Member