Personal Information

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Education

Millburn High School | May 2016 | Millburn, NJ
Graduated with Honors

Washington University in St. Louis | B.Sc. | May 2020 | St. Louis, MO
Dean's List Honors - Cumulative GPA of 3.4 - In Major GPA of 3.3

Washington University in St. Louis | M.S. | May 2021 | St. Louis, MO
I have applied into the Computer Engineering program at my alma mater and other colleges as well

Links

LinkedIn:// noahsaffer
Github:// Saffsanity
Facebook:// noah.saffer
Twitter:// @NSaffer
Twitch.tv:// Saffsanity

Coursework

High School

Introduction to Computer Science
AP Computer Science
Advanced Robotics

Undergraduate

FL2016
Introduction to Digital Logic and Computer Design (260M)
Computer Science II (132)

SP2017
Data Structures and Algorithms (247)
Introduction to Electrical and Electronic Circuits (230)

FL2017
Probability and Statistics for Engineering (326)
Introduction to Systems Software (361S)
Computer Architecture (362M)
Differential Equations (217)

SP2018
Introduction to Electrical and Electronic Circuits II (232)
Internet of Things (222S)
Operating Systems Organization (422S)
Computer System Design (462M)

FL2018
Object-Oriented Software Development Laboratory (332S)
Cloud Computing with Big Data Applications (427S)
Software Engineering Workshop (437S)
Digital Systems Laboratory (465M)

Skills - Programming and Engineering

Proficient:
Java, Shell, C, VHDL, Python, C++

Significant Familiarity:
Verilog, ExpressPCB, SQL, LaTeX, Assembly, HTML, CSS, Javascript

Slight Familiarity:
C#, Vex Robotics, Gamesalad

Achievements and Projects

- Created a fully functional Bluetooth-to-VGA adapter with an FPGA. Functionality included sending a character stream from a mobile app to a bluetooth module attached to our PCB, which would hand the information to the FPGA via SPI. The FPGA would

then write the character to a RAM. After deciding on the appropriate behavior based on the character sent, the FPGA would then read the RAM and perform the task (i.e. clear the screen, write the character to the screen, etc.) (VHDL, ExpressPCB, HTML, CSS and Javascript)
- Created a 32-bit CPU using an FPGA that was based on a Simple RISC with microprogramming and expanded it in my free time (VHDL, Verilog).
- Worked on a Vex bot with 8-way traversal using omnidirectional wheels (Vex Robotics)
- Fully re-created the NES Classic Duck Hunt with Mouse and Keyboard support (Visual Basic)
- Helped create labs and coursework for Computer Design II as the Head TA
- Created a microcode programmable logic array (PLA) structure (VHDL)
- Made a mobile app in HTML, CSS and Javascript and ported the app to mobile platforms with Cordova (HTML, CSS and Javascript)
- Created a difference engine based on a Mealy-model finite state machine to calculate the peak of a polynomial function (VHDL, Verilog).
- Worked on 5 apps that were published to the Apple App Store (iOS Development).
- First place in the Hardware portion of HackMHSII, the hackathon at Millburn High School.
    - Created a VR skee-ball in Unity for HTC Vive within the 24 hour timeframe of the competition
- Wrote kernel modules for linux on Raspberry Pi
- Wired and soldiered a microphone to a USB 2.0 port for a PC
- Passion for computer building
    - Started a computer building, fixing and optimization business in High School with over a dozen customers
    - Overclocked multiple computer systems
    - Built and/or spec'd over 50 computers
- Modified Microsoft Kinect 2.0 to use USB 3.0 and 12V power instead of the proprietary ($50) Microsoft connector
- Scraped website for table data, input the information into an SQL database for later use in a future mobile app (SQL, import.io)

Experience

Amazon.com, Inc. | Software Development Engineering Intern | Seattle, WA | Summer 2018

- Twelve week internship in which I created and deployed software to production for Amazon Prime Video with a downstream consumer.
- Created a directed acyclic graph to perform a pipelined workflow for Live Video and Just After Broadcast data. Furthermore, I helped the artwork team with their workflow, since I pioneered the live events workflow described above.

- Modified over 10,000 lines of code on over a half-dozen production packages and reviewed and approved code for full-time Amazon engineers.
- Defined in-production POJOs, abstract classes and interfaces.
- Integrated with adolescent services within Amazon's newest generation of its video architecture.
- Created end-to-end testing, integration testing and unit testing for all of the software created, including over 85% unit testing coverage and over 80% branch coverage.
- Other skills used include dependency injection and object mapping in Java with model creation in XML.
- Participated by giving input in the Code Design Review (CDR) and Project Design Review (PDR) processes.
- Received a return internship offer for Summer 2019.
- Languages used include Java and XML

Computer Design I and II | Head Teaching Assistant | Washington University in St. Louis | 2016 - 2018

- CSE 260M:
    - After performing extremely well in a course meant for Juniors and Seniors as a Freshman, I was hired as a TA, and subsequently rehired for Spring 2018 as the head TA.
    - Helped students create FPGA designs including basic RISC processors and combinational logic
- CSE 362M:
    - After finishing with the highest class average as a Sophomore in a course meant for Juniors and Seniors, I was hired as the head TA.
    - Helped design the course labs and projects
    - Helped students design a video output from an FPGA to VGA and write to the display via commands to a RISC

Zatna LLC | Lead Programming Instructor | Martinsville, NJ | Summer 2017

- Taught high school and middle school children Intro to Electrical Engineering, Data Structures and Algorithms in Java, Python, C#, Unity, Tynker and GameSalad.
- I was promoted to the lead instructor position during the summer due to my excellent performance and ability to handle increased responsibility.
- Fully designed the courses I taught, as each course was built around my skillset

Data Structures and Algorithms | Teaching Assistant | Washington University in St. Louis | 2017 - 2018

- CSE 247:
    - Hired as a TA due to my excellent performance relative to the rest of the class in a course meant for Sophomores and Juniors, rehired for Spring 2018.

    - Worked on explaining complex algorithms weekly such as dijkstra's shortest path algorithm, RSA and more
    - Explained high level data structures such as heaps, maps and more

Founder, Advisor | Millburn Systems | Short Hills, NJ | Summer 2016

- Founded a freelance computer company that dealt with advising, fixing and building systems for a plethora of local customers and provided solutions for issues ranging from router setup to software speedup.

Database Manager | Beauty Bar | Livingston, NJ | Summer 2016

- Maintained and transferred medical data using software called Dr. Chrono for Mac, PC and iOS.

Research

N/A

Awards

First place in the Hardware portion of HackMHSII, the hackathon at Millburn High School. Created a VR skee-ball in Unity for HTC Vive within the 24 hour timeframe of the competition

Publications

N/A