**Brandon Chen**

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**EDUCATION**

**The University of Utah**, *Salt Lake City, Utah* GPA:3.13

*B.S.: Computer Engineering* Expected Graduation: May 2022

Relevant Coursework: *Intro to Object-Oriented Programming, Intro to Algorithms and Data Structures, Intro to Circuits, Software Practice, Computer Organization, Digital System Design, Computer Design, Physics I & II, Differential Equations & Linear Algebra, Engineering Probability and Statistics, Discrete Structures*

**SKILLS**

**Programming Languages:** *Java, JavaScript, Python, MySQL, MATLAB, C, C++, C#*

**Operation Systems:** *Windows, macOS, Linux, Unix*

**Technologies:** *HTML, Git, MIPS (assembly language)*

**Software Tools:** *VMware, GitHub Desktop, JUnit*

**Programming Environments:** *Eclipse, BlueJ, Visual Studio, Intel Quartus Prime*

**PROJECT EXPERIENCE**

**Pac-Man Game -** *Collaborative Project*  August 2020 – December 2020

* Created and tested 16-bit CPU on a Cyclone-V FPGA written in Verilog
* Integrated Raspberry Pi, Xbox One controller, and VGA display to interface with our CPU
* Created an assembler that converts assembly code into machine code
* Developed original software for the movement of ghosts, Pacman, and the game states, in machine language

**TankWars Game** - *Collaborative Project*  November 2020 – December 2020

* Recreated tank wars game using client/server architecture, allowing multiple clients to connect to a server
* Used JSON to represent and send information from client to server and vice versa using TCP in C#
* Used MVC architecture in order to have separation of concerns

**CPU Design** - *Independent Project*  March 2020 – May 2020

* Simulated and synthesized a 4-bit ALU, datapath, and tri-state buffers modularly in Verilog
* Then implemented a finite state machine
* Interfaced all the components together for a 4-bit CPU and controller for a microprocessor or microcontroller

**Sensor Systems** - *Independent Project*  April 2019 – May 2019

* Designed and simulated a simple sensor system to detect the temperature with a MS97 thermistor
* Built the circuit using insulating tiles to heat up or a convection current fan to cool down

**Infrared Signals** - *Collaborative Project* December 2018

* Coded programs on Arduinos (in C++) to send and receive messages using infrared transmissions
* Built a sender and receiver to work with obstructions in between the two Arduinos

**RESEARCH EXPERIENCE**

**Repeating Seismicity of Cape Mendocino** **|** University of California, Santa Cruz June 2017 – August 2017

* Conducted research as a group along with a professor looking into slow slip and swarm earthquakes
* Wrote a Python program to filter and locate clusters of seismic activity from 4 seismic stations and the IRIS database
* Cross referencing ground displacement, tremor maps, and filtered data from the 4 stations, we concluded that slow slip has been occurring without previous detection

**WORK EXPERIENCE**

**Hughes Lab -** *Lab Aide* November 2020 – Present

* Mix and pour different types of solutions
* Wash and sterilize lab equipment

**OfficeMax OfficeDepot -** *Sales Associate* May 2019 – September 2019

* Operated cash registers, restocked inventory, sold product insurance
* Improved efficiency closing down the store every night

**USSF Grade 8 Soccer Referee** August 2013 – August 2018

* Center referee or assistant referee, in teams of 3 or 4 to manage games for tournaments, leagues, or exhibitions
* Learned how to deal with people of all backgrounds during any circumstance

**EXTRACURRICULAR ACTIVITIES**

**University of Utah Men’s Club Soccer** August 2018 – Present