Adrian Ho

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PROJECTS

Taser Chess

- Developed a chess robot that provides real-time feedback through electrical shock from a TENS Unit controlled by an **Arduino** when a player makes a sub optimal move
- Integrated **reed sensors and magnets** to track the positions of chess pieces on a physical chess board to display the current board state and score on a **React.js** webpage real time
- Implemented web sockets using **Sockets.io** with a **Node.js** server to handle game logic, board evaluation, and communication between the webpage, Stockfish chess engine, and **Arduino**.

Markhov Music

- Developed a transition matrix utilizing **binary data parsing** in **C++** to effectively model the distribution of notes and rhythms in a MIDI file
- Implemented the two transition matrix in **Markhov chains** to compile unique sheet music using the Lilypond Module

League of Legends Role Analyzer

- Designed a responsive webpage using **ReactJS** and **react-chart-js** to analyze the most played roles and win rates of top League of Legends players
- Fetched the data of **400+ matches** using the Riot Games API to create a **RESTful API** with **Flask and Python**

EXPERIENCE

DATA Communications Management - IT Infrastructure Administrator

May - Aug 2023, Brampton, Ontario

- Developed a **PowerShell** script to automate server monitoring by pinging **120+** servers periodically to maintain an up-to-date active server list.
- Created comprehensive network diagrams using **Microsoft Visio** to depict the connectivity and layout of the entire DCM network and Azure Virtual Network

Midnight Sun Solar Car Team — Hardware Subteam

Sep 2022 - Jan 2023 / Waterloo, Ontario

- Worked in a team of 8 people to design printed circuit boards for the Battery Management System using **Altium Designer** to increase the speed of firmware implementation
- Searched and added new I/O expanders and kill switches on Digi-Key for the **Altium 365** component library to decrease the time to search for parts

Smith-Rogers Financial — Data Entry Clerk

Jun - Aug 2022 / Aurora, Ontario

- Organized **200+ investment statements** in an online database by scanning the physical copies and uploading to an online network to increase the speed of information retrieval
- Condensed and reviewed **500+ client portfolios** to ensure information on all clients are up to date

Spirit of Math — Teacher Assistant

Sep 2018 - Jun 2020 / Richmond Hill, Ontario

- Prepared and conducted weekly classes for **20+ students** in the 3rd, 4th and 8th grade to teach practical math knowledge to children
- Adapted teaching methods and instructional materials to effectively meet students' varying needs and interests

QUALIFICATIONS

Languages

Python, C/C++, Javascript, Java, HTML/CSS

Tools

Git, VSCode, OOP, Altium Designer, Reactjs, Nodejs, Linux, Arduino, VHDL

EDUCATION

University of Waterloo

Sep 2022 - Apr 2027 / Waterloo, Canada

Computer Engineering (BASc)

Relevant Course:

Data Structures and Algorithms
Digital Computers
Digital Circuits and Systems

ACTIVITIES & ACCOMPLISHMENTS

1st. YRHACKS 2021

Best Bot/AI Award

Hack the Valley 2022

Finalist (Top 10 of 250+ Teams)

Ontario Band Association (2018-2022)

Gold Award Each Year
20+ hours weekly practice

Music

Brass Ensemble President
Music Council Representative
Gold Band
Jazz Band

Swimming

Bronze Cross Level
Standard First Aid Certification

Athletics

Intramural Frisbee
Rock Climbing