CHRISTY PAN

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EDUCATION

McMaster University **Hamilton, ON**

B.Eng in Electrical and Computer Engineering *Expected Graduation, May 2027*

- **Related Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Electronic Devices & Circuits, Digital Circuits & Systems, Microprocessor Systems, Statistics & Applications

EXPERIENCE

Mircom Group of Companies - *Electrical Engineering Intern* *May 2024 – Sep 2024*

- Engineered a custom test jig for the production team to validate output voltage levels in fire alarm panels, incorporating visual and audio feedback for rapid pass/fail identification with ~98% precision
- Developed a C program for STM32 microcontrollers to enable precise voltage level measurements and synchronize pass/fail indicators, ensuring seamless hardware-software integration in the test jig and improved production efficiency
- Performed root cause analysis on hardware and firmware anomalies using oscilloscopes and logic analyzers, resolving timing discrepancies in communication protocols to streamline the debugging process and enhance system performance

Kumon - *Math & English Tutor* *Oct 2019 - Mar 2022*

- Provided personalized one-on-one tutoring sessions to students in Math and English, adapting teaching techniques to accommodate individual learning styles like creating diagrams and point form notes
- Demonstrated strong communication skills, explaining Functions and Algebra concepts in a clear and concise manner, while actively encouraging questions to ensure student comprehension

PROJECTS

Embedded Spatial Mapping System - Personal Project April 2024

- Engineered a precision measurement system with a Time-of-Flight sensor and rotating mechanism for 360-degree indoor scans, generating visual room layouts with up to 95% accuracy
- Developed a C++ program for data acquisition and graphical visualization using Matplotlib, providing users with intuitive and detailed spatial mapping visualizations

“CosmicGist” - *DeltaHacks* *Jan 2024*

- Created a website summarizer tool designed to tackle the prevalent issue of information overload on the internet, providing users with a time-efficient method to extract key insights from lengthy articles with just a paste of a URL
- Employed *Flask* for backend development by implementing 3 functions to retrieve, extract and summarize text from a given URL, integrating an API key to enhance summarization accuracy and reduce reading time by approximately 80%
- Designed a dynamic and interactive user interface using *React* framework, displaying a ‘recently summarized’ history log, to enhance user experience by finding value in being able to revisit their past websites

Snake Game *Nov 2023 – Dec 2023*

- Developed a C++ OOD “Classic Mode” snake game, enhancing user engagement by incorporating a dynamic random food generation system, resulting in a more enjoyable gaming experience
- Utilized Array Lists to store the positions of each segment of the snake, updating the positions as the snake moves by calculating the new head location and inserting it at the beginning of the list based on the current direction of movement

“Hurry-Cane” *March 2023 – April 2023*

- Engineered a compact device attachable to the client’s existing cane, alerting them when an object is nearby using haptic feedback, enhancing their everyday life activities
- Integrated a camera sensor with 98% accuracy, enabling real-time object detection
- Implemented haptic feedback technology by connecting the camera sensor to a Raspberry Pi, which activated a vibration motor, providing instantaneous alerts to the client’s fingertips

SKILLS

Programming: Python, C, C++, JavaScript, MATLAB, R, CSS, HTML
Tools: VSCode, STM32CubeIDE, Keil UVision, Git, PSpice, Cadence, Flask, ReactJS, RStudio, Excel, AutoCAD
Hobbies & Interests: IEEE, Women in Engineering, Weight Lifting, Ultimate Frisbee, Rock Climbing, Baking, Piano