Harsukrit Pall

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Education

University of Waterloo — Waterloo, ON
Candidate for Bachelor in Applied Sciences, Computer Engineering — *Sept 2024 – May 2029*

Technical Skills

Languages: Python, C, C++, C#, MakeCode, JavaScript, TypeScript, Java, HTML/CSS, Turing
Frameworks: React, NextJS, TailwindCSS
Developer Tools: GitHub, VS Code, CMake, Visual Studio, PyCharm, Git, Figma, I2C, SPI, FreeRTOS
Libraries: NumPy, Matplotlib, TensorFlow, Tkinter, WPILib, Tabulate, ThreeJS

Experience

Programming Instructor — Apr 2023 – June 2024
Code Ninjas — *Burlington, ON*

- Taught game development to students aged 5 to 18 in JavaScript, C#, Scratch, and MakeCode, introducing them to industry-leading platforms such as Roblox, Unity, and MakeCode, fostering early proficiency in game design.
- Collaborated with 15 coworkers to deliver STEM enrichment for 500+ students and host 20+ events yearly.
- Provided enrichment in Python, JS and more to program drones, giving students embedded systems experience.

Financial Officer — July 2023 – Present
WilderCare — *Oakville, ON*

- Collaborated with 9 partners to develop a non-profit to help support the Oakville-Milton Humane Society.
- Sold hand made animal-themed bracelets and spread our message at public events, raising $500+ in a month.
- Created and managed financial documents, React website, social media and managed $1000+ of company funds.

Projects & Community

Priority Calculator Plus | *TypeScript, React, Next, TailwindCSS* — Dec 2024

- Built a React-based workload tracker to organize tasks in multiple formats, increasing productivity by 100%.
- Designed an algorithm to schedule study sessions based on task importance, difficulty, and availability.
- Enhanced user engagement and productivity by implementing modern UI/UX design principles with TailwindCSS, enabling students to track progress, allocate study time effectively, and maintain strong work habits.

CIFAR-10 Image Classifier | *Python, TensorFlow, Matplotlib, Machine Learning* — Nov 2024

- Developed an advanced image classification system using TensorFlow and CNNs, achieving 94% accuracy on the CIFAR-10 dataset, and enabling the classification of any input image with fast, real-time predictions.
- Created a flexible model that classifies any image by loading pre-trained weights or training from scratch, optimizing performance and reducing training time by 95% through efficient processing.

UW Orbital Team Member - CubeSat Thermal Firmware | *C/C++, FreeRTOS, I2C, ISRs* — Nov 2024

- Developed a robust firmware solution for CubeSat thermal management, integrating I2C communication with the LM75BD sensor and achieving a 100% pass rate on unit and integration tests through rigorous testing.
- Improved system performance by using FreeRTOS tasks for real-time data collection, reducing downtime by 20% through efficient error handling and reliable system behavior.

Dormitory Security Alarm System | *C/C++, I2C, STM32 Microcontroller, AutoCAD* — Oct 2024

- Built a wireless dormitory alarm system using three STM32 Nucleoboards with PIR sensors, accelerometers, and HC-05 Bluetooth modules, programmed in C for motion detection and alerts within a 20-meter range.
- Validated system performance with precise resistor calculations via Ohm's Law, applied signal conditioning for reliable sensor accuracy, and conducted range and sound output tests to ensure robust Bluetooth connectivity.

Elden Ring Weapons Browser | *Python, File I/O, OOP, CSV* — June 2023

- Utilized Python and File I/O to parse through scraped data from video game to create a weapons browser with relevant stats resulting in an organized browsing solution for players leading to new in-game creative possibilities.
- Utilized OOP to integrate in-game weapon mechanics and enable manipulation of weapon and user conditions, generating 1000+ unique cases for detailed weapon stat simulations, optimizing player build analysis and strategy.