

Harshvir Sandhu

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EDUCATION

Western University | B.Sc Computer Science; Minor in B.Eng Software Engineering
Coursework: Computer Architecture, Systems Programming, Data Structures

Expected: 2027

SKILLS SUMMARY

Programming & Software:

Python, C++, Java, TypeScript, JavaScript, HTML/CSS, Shell Scripting, Bash, React.js, Angular, Flask, Node.js, REST APIs, n8n, Lovable, TensorFlow, PyTorch, Linux, IBM Cloud

Hardware & Embedded Systems:

PCB Design, VHDL, Arduino, STM32, Raspberry Pi, Sensors & Actuators, Circuit Debugging, System-Level Testing, TinkerCad

EXPERIENCE

WE Autopilot

December 2025

Software Developer

- Researched and evaluated multiple battery chemistries (Li-ion NMC, LiFePO₄, and solid-state prototypes) to identify a cost-effective solution optimizing energy density, thermal stability, and lifecycle (cycle life > 2,000) for autonomous golf cart deployment
- Designed and simulated an integrated control algorithm interfacing with vehicle autonomy software to optimize energy usage based on route prediction, speed profiles, and terrain, increasing system uptime by 18%
- Developed a software-based battery management and energy optimization module to dynamically regulate cell voltage, temperature, and state-of-charge, reducing simulated degradation rates by up to 15% while lowering long-term operational costs

SEDS Canada

February 2025 - Present

Co-Chair, Web Development Lead

- Managed and maintained all organizational web platforms, ensuring high availability, security, and seamless user experience.
- Led a complete redesign and redevelopment of the SEDS Canada website using web technologies (HTML, CSS, JavaScript, React, and Node.js), improving performance and accessibility by 40%.
- Integrated analytics and automation tools to streamline content updates and event management, increasing team productivity and reducing manual workload.

Western Cyber Society

November 2024 - April 2025

Software Developer

- Developing an AI-powered health monitoring system for elderly care, using microprocessors and sensors to track vital health metrics and detect abnormalities
- Worked primarily on the hardware team, integrating DHT11 temperature and ADXL335 accelerometer sensors to collect real-time data.
- Contributing to system design and collaborated with the AI team to ensure accurate health monitoring and alerts for caregivers.

PROJECTS

AI-Powered Radiology for Optimized Hospital Wait Times

January 2025

- Developed an AI-driven solution to enhance radiology imaging processes, reducing hospital wait times and improving diagnostic efficiency.
- Proposed a deep learning model for automated image scanning and anomaly detection, enabling faster and more accurate interpretation of X-rays, MRIs, and CT scans.
- Designed a streamlined workflow integrating AI with hospital radiology systems to prioritize urgent cases and optimize resource allocation.

NEUROHOPE

September 2025

- Developed a BCI-based neural monitoring model to study brainwave activity patterns related to addiction and reward response
- Implemented EEG data acquisition using open-source hardware and processed signals with Python and TensorFlow
- Applied machine learning classification to detect and visualize neural trends during simulated drug-exposure sessions

LEADERSHIP AND ACTIVITY

Western-Women In Tech Society

July 2025 -Present

Careers Director

- Lead initiatives to connect women students with tech industry professionals, fostering mentorship, networking, and career growth in STEM fields.
- Build and manage partnerships with top tech companies to create pathways for women to succeed in technology careers.

Seva Food Bank

June 2025 - August 2025

Community Development Coordinator

- Led a youth reintegration program for individuals returning from juvenile detention, delivering structured mentorship and facilitating trust-building initiatives with Peel Regional Police to support safe community re-entry
- Managed and expanded a Domestic Violence Support Program by coordinating counseling services, resources, and community partnerships to improve access and program effectiveness.