Harman Singh

Kitchener, Ontario, Canada | 226 - 792 - 8072 | harmansingh2003ca@gmail.com | harmansingh.tech

SUMMARY

4th-year engineering student experienced in fullstack, backend, frontend, mobile development and robotics/embedded programming. Seeking an internship, available May - December 2025.

EDUCATION

University of Guelph   **Guelph, ON**

Bachelor of Engineering in Engineering Systems and Computing   *Graduation Date: May 2026*
GPA: 3.8

WORK EXPERIENCE

Ciena   **Ottawa, ON**
Internal Tools Developer Intern   *May 2024 - Aug 2024*

- Implemented a backend API using FastAPI and Python to streamline the process of managing vulnerable assets, resulting in a 30% reduction of security vulnerabilities across company devices.
- Developed a comprehensive project plan for backend codebase development and database migrations, resulting in a seamless integration process and a 100% completion rate of the application by the end of the internship.
- Implemented robust authentication and authorization protocols using JWTs and Okta to safeguard backend resources.
- Automated build and deployment using GitHub workflows, enabling the security team to access real-time information on company devices and vulnerabilities.
- Managed AWS resources by provisioning API Gateways and Lambdas using Terraform to enable efficient hosting and scalability of the application.

Wave Financial   **Toronto, ON**
Software Engineer Co-op   *Jan 2024 - Apr 2024*

- Developed and maintained microservices, using Python and Django, improving system stability and user experience.
- Optimized AWS S3 infrastructure by implementing lifecycle policies, resulting in $2,000 in yearly cloud savings.
- Developed user interfaces for a mobile application with over 10,000 active users, utilizing React Native, HTML, CSS, JavaScript, TypeScript, and GraphQL to enhance user experience and improve application performance.
- Developed SQL queries for AWS Redshift to analyze 10,000+ data points for the Machine Learning team, facilitating data-driven decision-making.
- Reduced incident response times by implementing automated Slack alerts using Datadog and Terraform.
- Contributed to an interactive catalog of Storybook components and corresponding Jest unit tests, reducing manual testing time.

Centre for Biodiversity Genomics   **Guelph, ON**
Programmer Co-op   *Jun 2023 - Sep 2023*

- Improved database performance, enhanced security, and increased stability for an independent research institution with the world's largest repository of DNA barcode data (10M+ specimen records) by migrating the backend from PHP 5.3 to PHP 8.1.
- Spearheaded the first-ever comprehensive code review of the database access layer, resulting in the identification and documentation of dozens of bugs, improving overall code maintainability and efficiency.
- Modernized and refactored outdated PostgreSQL queries, improving security and maintainability.

PROJECTS

Six-Axis Robot Arm | *Python, C++, 3D Modelling*

- Designed and engineered a 3D-printed 5-axis robotic arm with 360-degree range of motion using SolidWorks and Fusion 360, optimizing designs for efficient 3D printing and improved functionality.
- Developed and implemented code in C++ and Python for precise motor control using Arduino and Raspberry Pi

Edge Detection Website | *JavaScript, HTML, CSS*

- Created an edge detection site using HTML, CSS, and JavaScript, capable of locating the edges in an uploaded image

SKILLS

Languages & Frameworks: Python, Django, FastAPI, HTML, CSS, React Native, React, JavaScript, TypeScript, SQL, GraphQL, C, C++, Java, Terraform, PHP, R, Assembly, VHDL, MATLAB, RTOS
Tools & Concepts: AWS, REST APIs, Monitoring & Observability, Authentication, Object-oriented Programming, Fullstack, Frontend, Backend, Git, JIRA, Agile/Scrum, Datadog, Arduino, Raspberry Pi, SolidWorks, Fusion 360

AWARDS

University of Guelph Engineering Design Day (2023): 1st out of 50+ teams. Led team of 6 engineers to create a functional 3D-printed crossbow Kinder Egg toy to compete with 300+ other students.