Harman Singh

SUMMARY

3rd-year engineering student seeking a co-op/internship, available May - August 2024. Experienced in fullstack, backend, frontend, and mobile development.

WORK EXPERIENCE

Software Engineer Co-op January 2024 – April 2024
Wave Financial Toronto, ON

- Performed backend development of various microservices, using **Python** and **Django**, improving system stability and user experience.
- Developed core features and user interfaces for a mobile accounting application with **100,000+** active users, using **React Native**, **HTML**, **CSS**, **JavaScript**, **TypeScript** and **GraphQL**.
- Contributed to an interactive catalog of Storybook components and corresponding Jest **unit tests**, reducing time spent on manual testing.
- Developed **SQL** queries for **AWS Redshift** to analyze **tens of thousands** of data points for the Machine Learning team, facilitating data-driven decision making.
- Implemented automated **Slack** alerts for critical production systems using **Datadog** monitors and **Terraform**, enhancing operational awareness and reducing response time to incidents.
- Managed **AWS S3** resources using **Terraform**.

Programmer Co-op June 2023 – September 2023
Centre for Biodiversity Genomics Guelph, ON

- Improved database performance, security, and stability for an independent research institution with the world's largest repository of DNA barcode data (**tens of millions** of specimen records) by migrating from PHP 5.3 to PHP 8.1.
- Spearheaded the first-ever comprehensive code review of the database access layer, documenting bugs and identifying unnecessary code.
- Led adoption of the PHPUnit library for unit testing, developing **hundreds of unit tests** using **Bash** scripts, significantly reducing manual testing.
- Modernized and refactored outdated **PostgreSQL** queries to improve extension compatibility, unlock additional features, improve readability, and increase maintainability.

SELECT PERSONAL PROJECTS

Six-Axis Robot Arm

- Designed and engineered a **3D-printed** robotic arm capable of 360-degrees range of motion.
- Developed code to control motors using **Arduino** and **C++**, later migrated to **Raspberry Pi** and **Python**.
- Drafted design in **SolidWorks** and modified open-source models in **Fusion 360**.

Image Edge Detection Website

- Built a user-friendly website that uses image processing to detect edges in uploaded images: https://harman-singh-2003.github.io/EdgeDetection/
- Successfully transitioned the project from a **Python** script to a web application using **JavaScript**, **HTML**, and **CSS**, creating an interactive website.

CONTACT

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226-792-8072
Portfolio
github.com/Harman-Singh-2003

SKILLS

Languages & Web Frameworks

- Python
- Django
- HTML
- CSS
- React Native
- React
- JavaScript
- TypeScript
- SQL
- GraphQL
- C
- C++
- Java
- Terraform
- PHP
- R
- Assembly
- VHDL
- MATLAB

Tools & Concepts

- AWS
- Fullstack
- PostgreSQL
- Unix
- Frontend
- Backend
- REST APIs
- Web dev
- Observability
- JSON
- Monitoring
- Datadog
- 3D-printing
- Redshift
- Fusion 360
- Arduino
- Raspberry Pi
- RPC
- Agile/Scrum
- Git
- SolidWorks
- JIRA
- Object-oriented Programming (OOP)

EDUCATION

University of Guelph
Bachelor of Engineering
Engineering Systems & Computing
2021 - 2026 (expected)
GPA: **3.81/4.0**

AWARDS

University of Guelph - Engineering Design Day Competition (2023)
1st Place
Led a team of 6 engineers to design and construct a fully functional 3D-printed crossbow at the scale of a Kinder Egg toy, winning 1st place out of 50+ teams of 300+ students.