

# Muhammad Shaaf Yousaf

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## EDUCATION

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### University Of Toronto

Honors Bachelor of Science, Computer Science Specialist (Co-op) - Software Engineering

Toronto, ON

Jan 2023 – Present

### Certifications:

- Machine Learning: Introduction with Regression - *Codecademy issued June 2024*
- Intro to Cloud Computing - *Codecademy issued June 2024*

## PROJECTS

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### System Monitoring Tool | C, UNIX

Jan 2025 – Feb 2025

- Built a Real-Time **UNIX** tool in **C** that tracks memory usage (GB), CPU utilization (%) and CPU core details by reading system metrics from 4+ **UNIX system files**.
- Displays system statistics using ASCII-based graphs, which are updated using **ANSI escape sequences** every 500,000 microseconds (0.5s) with no visible flickering.
- Supports custom sampling rate M (default of **20**) every N microseconds (default of **500** microseconds) through command-line arguments.
- Optimized system file reading, reducing unnecessary operations and achieving a **20-nanosecond** read time for default settings.
- Memory-efficient implementation, with no dynamic heap allocations, ensuring zero memory leaks (verified with **Valgrind**).

### Portfolio Website | GitHub Pages, HTML/CSS, Affinity Designer, Figma

Dec 2024 – Jan 2025

- Prototyped **9 designs** using **Affinity Designer/Figma** to visualize and improve site layout and user experience before development.
- Deployed 2 designs through static pages framework using **GitHub** into a **responsive web-page** using **HTML & CSS**, managing version control and hosting via GitHub Pages.
- Optimized user interface for **screen widths** above and below **850 pixels**, which ensured accessibility and usability across devices.

### Planetze Android Application | Java, XML, Firebase, Android Studio, Jira, Git

Sep 2024 – Dec 2024

- Developed a fully-featured Android application using **Android Studio** and **Java**, that tracks Carbon-footprint and provides real-time feedback to track and promote carbon-friendly habits.
- Implemented **Firebase** to handle user-authentication and data-storage, for user-privacy, real-time data visualization, and daily user surveys.
- Tracked app development through Scrum Agile Framework using **Jira** and **Git**, which helped perform **JUnit** testing at the end of Sprint to ensure application performs as expected.
- Designed beautiful UI using **XML** and Affinity Designer (13 interactive views), **selected for final project presentation to partner organization** out of 34 total groups.

### Course Web | Flask, Python, HTML/CSS

Feb 2024 – March 2024

- Designed back-end using **Flask** framework in **Python**, ensuring accessibility across devices and an active greeting feature that adjusts based on user input for over 100 students enrolled in the course.
- Implemented effective UI using HTML/CSS, by creating 10 User Stories with Mock-Ups before development, for a functional and user-friendly design.
- Ensured ease in future development by writing a project **Retrospective Report** after development, which detailed challenges faced during the design process.

## TECHNICAL SKILLS

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**Languages:** Java, Python, C, SQLite, HTML/CSS/XML,

**Frameworks:** PyTorch, Scikit-learn, Flask, JUnit, Ursina

**Developer Tools:** Git, Firebase, Google Colab, PyCharm, IntelliJ, Eclipse, VS Code

**Graphics Softwares:** Figma, Affinity Designer, Blender

**Libraries:** pandas, NumPy, Matplotlib, google.generativeai