

Nihal Singh

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Education

Bachelor of Applied Science in Computer Science CO-OP Honors

McMaster University

September 2021 – Expected May 2026

Hamilton, ON

- Available for 4/8 month CO-OP
- Relevant Coursework: Software Development Life Cycle (SDLC), Data Structures and Algorithms, Computer Networks & Security, Operating Systems, Software Testing, Data Mining, Databases, Introduction to Cryptography, Cyber Security and Security Operations

Technical Skills

Programming & Development: Python, SQL/NoSQL, JavaScript, Java, MongoDB, C#, C/C++, HTML, CSS, Haskell, MS Office Suite

Tools & Technologies: Git, Jira, Jenkins, NodeJS, ReactJS, XML/XAML, Selenium, Linux, Oracle, BitBucket, Visual Studio, OpenCV, XCode

Projects

Tesla iOS Application

June 2023

Designed a realistic Tesla mobile application to enhance user experience

- Implemented **Swift** frameworks and utilized **Figma's** engaging features to design an intuitive automotive application interface with SwiftUI, resulting in a **30% increase** in user engagement
- Employed the fundamentals of **Swift** to create a responsive car application with underlying design interactions, which enhanced my understanding of program app designs with **SwiftUI**. Showed **creativity** and **willingness to learn and grow**

DeepFocus

August 2023

Productivity-enhancing Google Chrome Extension

- Developed the DeepFocus Extension using **HTML**, **CSS**, and **JavaScript** to empower users to optimize their work routine by blocking access to social media sites during designated work periods, enabling them to maintain focus and productivity
- Performed user acceptance testing (UAT) by surveying **30+ users**, analyzing feedback to improve extension functionality and boost productivity, demonstrating a **strong technical mindset** and ability to solve problems by **introducing effective solutions**

Comparative Analysis of Pathfinding Algorithms

April 2023

Explored the efficiency of different algorithms across various graph structures

- Executed the comparative analysis of different pathfinding algorithms, specifically comparing **Dijkstra's**, **Bellman-Ford's**, and **A*** in **Python** and deduced their runtime and coherence across various graph constructions
- Conducted a **12-week empirical performance analysis**, confirming **Dijkstra's consistent out performance over Bellman-Ford** in graphs of varying sizes and edge configurations for fixed nodes, showcasing a **strong analytical-thinking mindset** and ability to handle large datasets

IntelliCount

January 2024

Advanced Vehicle Detection and Counting System

- Devised IntelliCount, an **OpenCV** based system, to regulate traffic flow by accurately tracking and counting vehicles from video feeds
- Applied detection algorithms to double precision and improve tracking through custom **background subtraction** and **contour analysis**. Optimized system performance for real-time application, ensuring reliable vehicle counts under varying environmental conditions

Math Visualizer

April 2022

Interactive tool for understanding derivatives visually

- Collaborated and built a responsive study tool based on the elementary concept of derivatives using **ELM**
- Delegated an intuitive UI that enables users to easily select the appropriate derivative from a visualizer, display it graphically for improved comprehension and directed user interviews **over the course of 12 weeks**, developing strong **collaboration skills** and ability to **work effectively in teams**

Experience

Academic Director

September 2022 - Present

McMaster Computer Science Society

Hamilton, ON

- Ensured alignment of academic activities with society goals and mission by conducting regular evaluations and making strategic adjustments, resulting in a **10% improvement in the overall effectiveness of the program**
- Orchestrated academic events, collaborating with professors and industry professionals, resulting in a **20% increase in attendance**
- Deployed an online mentoring program for students seeking guidance in their academic pursuits, generating an increase in successful academic clarification amongst **30+ students within the first 3 months**

LPO Analyst

May 2023 - July 2023

Lava Visual

Dubai, UAE

- Aided in managing and optimizing local purchasing orders for National companies in the United Arab Emirates
- Utilized **Oracle** to create and maintain a database of local purchase orders, **produced a 20% reduction in legal costs and a 15% increase in project completion planning**
- Showcased strong **communication and problem solving skills** with external vendors, adapted to new challenges, and collaborated effectively with teams, **exhibiting ability to listen in a cohort and collaborate ideas with confidence**