# Simran Dhaliwal

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## EDUCATION

**Bachelors of Science in Computer Science**
University of Michigan • Ann Arbor, Mi • 2024

## EXPERIENCE

**Developer**
*University of Michigan Solar Car Team (UMSCT) • August 2022 - Present • Ann Arbor, MI*
• Enhanced Telemetry subsystem performance by 15%, through proactive debugging, and optimization, leveraging SQL and Javascript, for accelerated statistics display and efficient aggregation of critical data from 8 distinct vehicle sensors.
• Collaborated with multiple teams to create and develop three cloud-based race simulators, incorporating advanced statistical modeling to accurately simulate diverse weather and road conditions, among other crucial factors.

## PROJECTS

**Personal Website**
*April 2023 -May 2023*
• Built full stack personal website using React, Javascript, and CSS to include links to social websites, and contact via email or message through the website

**Assembly Language Assembler and Simulators**
*March 2023 - March 2023*
• Created efficient programs utilizing assembly language and C to simulate computer architecture, accurately producing desired outputs through up to 2000 precise cycles and structure replication.

**Covid Data Analysis**
*November 2022 - December 2022*
• Utilized 6 Machine Learning algorithms to analyze over 1000 unique data points related to COVID-19
• Generated 15 distinct representations of the model's results for data analysis with the use of Python
• Analyzed 12 varying factors of spread and severity

**Zombie Invasion Game**
*October 2022 - October 2022*
• Implemented object-based programming in C++ to develop a zombie invasion game with up to 50 given statistics about the game and players

**Mechanical and Chemical Physics Simulators**
*January 2022 - April 2022*
• Wrote and utilized 27 unique physics simulators in Vpython to simulate and visualize situations ranging from rocket launches to carbon atom collisions

**Image Seam Carving**
*January 2022 - January 2022*
•Designed and implemented a user-friendly command-line interface (CLI) to seamlessly resize up to 5 images, preserving their original quality and integrity
• Developed a seam carving algorithm with C++ that accurately analyzes image energy matrices, effectively identifying and preserving critical details while seamlessly adapting to image context with an average of 25% reduction in image file size

## COURSEWORK

Data Structures and Algorithms (EECS 281)
Database Management Systems (EECS 484)
Computer Organization (EECS 370)

## SKILLS

C++ & C, SQL & Query Optimization, VPython & Python, R, React & CSS, Java & Javascript