Amhar Rishan

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EDUCATION

McMaster University   Hamilton, ON
Bachelor of Engineering in Computer Engineering (CO-OP)   *Sept. 2022 – Present*
- Relevant Courses: Digital Systems Design, Data Structures & Algorithms, Microprocessor Systems, Logic Design
- CGPA: 3.7/4.0, Dean's Honour List

TECHNICAL SKILLS

Languages: Python, C/C++, Verilog, HTML/CSS, JavaScript, Matlab, R
Frameworks: React, Node.js, Flask, Open3D
Developer Tools: Arduino, Autodesk Inventor, Git, VS Code, Intel Quartus, PSpice, Microsoft Office, Power BI
Libraries: pandas, NumPy, Serial, Matplotlib

PROJECTS

LiDAR3D - Spatial Mapping | *C, Python, Open3D*   Jan 2024 – Apr 2024
- Engineered a LiDAR-based 3D scanning system with a VL53L1X Time-of-Flight sensor and ARM Cortex-M4F microcontroller, capturing 360-degree indoor views with a range of up to 4 meters.
- Implemented **I2C** communication between the sensor and microcontroller, facilitating **UART**-based data transfer to a PC.
- Developed a detailed 3D visualization of the environment using **Python** and **Open3D**, enabling interactive spatial data analysis.

Snake Game | *C/C++*   Oct 2023 – Nov 2023
- Created a console-based Snake game using **C++** with Object-Oriented Programming methods, ensuring responsive and seamless gameplay for two players.
- Optimized performance by reducing runtime by **84.3%** through the implementation of data structures such as linked lists, stacks, queues, and hash tables, significantly improving memory efficiency and enhancing the gameplay experience.

Note-it - CRUD Note-taking App | *JavaScript, HTML/CSS*   Aug 2024 – Sep 2024
- Developed a fully functional **CRUD** (Create, Read, Update, Delete) note-taking application using **JavaScript** for the frontend, leveraging **local storage** to persist user data without the need for a backend database.
- Designed and implemented a responsive and user-friendly interface featuring light and dark modes to enhance accessibility and provide a smooth user experience.
- Utilized **local storage** to manage and store user notes, ensuring quick and efficient data retrieval directly in the browser.
- Built a component-based architecture to isolate functionality, making the application easier to maintain, extend, and test for future enhancements.

Football Match Predictor | *Python, pandas, Scikit-Learn*   Jul 2024 – Jul 2024
- Developed a predictive model for Premier League match outcomes, integrating web scraping techniques to collect and process match data using **pandas** for efficient data preparation.
- Applied machine learning algorithms from **scikit-learn** to build and train the model, achieving an **82%** accuracy in predicting match results.