

Ali Naqvi

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EDUCATION

McMaster University

Sep. 2022 - Present

B.Eng, Computer Engineering

Hamilton, ON

- **GPA: 3.7/4.0**
- Honors: Dean's List (2022, 2023), Engineering Award of Excellence entrance scholarship.
- Relevant Coursework: Data Structures & Algorithms, Probability & Statistics, Calculus (I, II, III), Microprocessor Systems Project, Analog Circuits & Devices.

TECHNICAL SKILLS

- **Languages:** Python, C++, C, HTML/CSS, Javascript, MATLAB/Simulink.
- **Libraries/Technologies:** Makefile, Pandas, Open3D, NumPy, React.js, EmailJS.
- **Other:** Jupyter Notebook, Git, GitHub, VSCode, Keil uVision, STM32, STM32CubeIDE.

PROJECTS

Task Scheduler

July. 2024 – Aug. 2024

- Developed a preemptive task scheduler for the STM32F407VG microcontroller, enabling context switching between multiple tasks using the STM32 Cube IDE.
- Implemented core scheduling functions, including stack initialization, context saving/restoring, and task prioritization using ARM-Cortex M architecture.

3D-Lidar Scanner

Apr. 2024 – May. 2024

- Engineered a 3D Spatial Mapper using a MSP432E401Y microcontroller, a VL53L1X Time-of-Flight sensor, and a mounted stepper motor enabling accurate 360-degree spatial measurements up to 4 meters away.
- Implemented real-time data transmission and visualization using the NumPy and Open3D libraries in Python to produce detailed 3D models of scanned environments.
- Optimized system performance by managing I2C communication and UART data transfer, ensuring seamless operation between visualization and data acquisition during spatial mapping.

Console Snake Game

Sep. 2023 – Nov. 2023

- Created a C++ command line-based Snake game using various data structures such as Array Lists and Linked Lists to efficiently manage game state and logic.
- Implemented dynamic memory management and debugging techniques with GNU tools and Dr. Memory, ensuring robust game performance and minimal memory leaks.
- Integrated custom object-oriented classes to handle game mechanics, player input, and food generation, enhancing modularity and code maintainability.
- Utilized Makefile for build automation, streamlining the compilation and linking processes.

NON-TECHNICAL EXPERIENCE

Stuart Weitzman

Jun. 2023 – Present

Stock and Sales Associate

Halton Hills, ON

- Utilized collaboration and communication skills to effectively organize stock and shipment items in a team-oriented environment.
- Developed customer service and problem-solving skills while upselling inventory to customers on the floor consistently meeting sales goals for the month.