Hamayoon Ashraf

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Skills

Software: Solidworks, C/C++, Python, Arduino, AutoCAD, VHDL, Multisim, Simulink, MATLAB, Intel Quartus
Hardware: Arduino, 3D Printing, Digital Circuit Design, PCB design, Drill Press, Soldering

Education

Ryerson University, Mechanical Engineering - Mechatronics Option (BEng) Sept 2020 - Apr 2025
GPA: 3.3/4.33
Relevant Courses: Fluid Dynamics, Thermodynamics and Heat Transfer, Statics and Strength of Materials, Digital Systems, Dynamics, Electric Circuits, Digital Computation and Programming, Manufacturing Fundamentals

Experience

TorontoMet Design League: *Space Mining Robot* Oct 2020 - Feb 2021

- Assembled a robotic arm on SolidWorks that utilises jackhammers to drill through large rocks.
- Produced detailed drawings and assembly diagrams for all parts of project as per requirements.
- Devised a solution to mine rocks on Mars to support Earth's increasing demand for natural resources.

Simply BBQ - *Supervisor* Jan 2020 - Sep 2021

- Assisted with catering and inventory management.
- Exhibited strong communication abilities when communicating with customer.
- Handled large-scale orders, such as weddings.

Coding Instructor - Part Time - *Lead Instructor* May 2021 - July 2021

- Curated lectures to educate students aged 10-18 courses related to programming in Python, Java.
- Conducted various offsite sessions with students to investigate Arduino and Visual Studio Code.
- Organised and scheduled students to the institute resulting in a 30% increase in enrolment.

Shawarma Royale - *Manager* Jan 2022 - Dec 2022

- Managing inventory to ensure optimal stock levels and availability.
- Resolving customer complaints and issues to improve satisfaction.
- Scheduling and handling sales to drive revenue.
- Managing financial records and reports to support decision making

Projects

VisionX - *McMaster DeltaHacks 6* Feb 2020

- Led a group of 4 to create a device that assists individuals with visual impairment.
- 3D designed and managed all of the wired components.
- Wrote Python scripts for Raspberry Pi to control the ultrasonic sensors.

Automated Door Unlocking System - *Personal Project* Jan 2022 - Dec 2022

- Created a door access solution for individuals with disabilities.
- Used Arduino, servo motors, and fingerprint sensors to ensure secure and efficient operation.

Arithmetic Logic Unit (ALU) – *16-bit ALU core in Intel Quartus* Nov 2022 - Dec 2022

- Designed all the components of the device from scratch (Ex: Latches, 4-16 decoder, FSM, 7 segment etc).
- Implemented various operations such as addition, subtraction, modulation.
- Tested by implementing the code on a FPGA (Field Programmable Gate Array).

Self-Driving Robot - *Arduino in C/C++* Feb 2023 - Apr 2023

- Manufactured a chassis with 4 barriers through 3D printing to carry Arduino components and be the robot.
- Assembled 10 component circuits using Arduino Nano and Breadboard to provide power for 2 motors and 2 sensors to operate.