

# Ahmed Abdelhalim

(289)-681-1990 | [ahabdelhalim20@gmail.com](mailto:ahabdelhalim20@gmail.com) | [www.linkedin.com/in/ahmed-abdelhalim-99442a1b3/](https://www.linkedin.com/in/ahmed-abdelhalim-99442a1b3/)

## EDUCATION

### McMaster University (B.Eng)

Bachelor of Computer Engineering

Sep 2020 – Apr 2025 (Expected)

Hamilton, ON

- **Relevant Courses:** Software Architecture (Python Scripting), Fundamentals of Machine Learning (Python Scripting), Microprocessor Systems (C++), Embedded Systems (C), Operating Systems (Linux Firmware)

## Technical SKILLS

**Programming Languages:** Python Java • C • C++ • System Verilog • R • MATLAB • Perl

**Web / Business Development:** Flask • HTML5 • CSS3 • Tableau • PowerBI • Javascript • React • Node.js

**Tools / Applications :** Git • Linux Command Line • API • Raspberry Pi • AutoCAD • Simulink UML • SolidWorks

**Cloud:** InforM3 • AWS • SAP • Oracle • GCP

## EXPERIENCE

### Digitalization Engineer CO-OP

Proctor & Gamble

May 2023 – May 2024

Belleville, Canada

- Implemented and managed identity and access control solutions, ensuring secure authentication and authorization processes across manufacturing environments. Enforced Zero Trust security models, deployed multi-factor authentication (MFA), and managed privileged access using **AWS**. Collaborated with **IT/OT** Partners in the United States to strengthen identity security policies and prevent unauthorized access to critical production systems.
- Organized a secure **Machine Learning** interface using **Python** environments that takes in multiple parameters from the lines machines as well as pictures from the products state and accurately predicts when the line is about to shut down due to excessive loads on **OT** servers which saves almost **\$140,000/year** on the manufacturing line which had the environment installed.
- Executed a Touchless Manufacturing workshop that encompassed different department managers from around the world to discuss pain points of different departments on-site with multiple **PowerBi** dashboards that were used to showcase the wasted time and effort used on daily tasks and help eliminate them.
- Created a seamless data interface between excel files and **Tableau** dashboard for managing logistical problems related to Storage capabilities and order processes to efficiently utilize Site resources which saved **\$161,000/year**.

### IT/OT Intern

INNOVO

May 2022 – Aug 2022

Dubai, UAE

- Facilitated seamless data exchange among construction sites using Cloud services on **Oracle** Machines by implementing and maintaining server operations on company IPs, enabling efficient sharing of critical information such as blueprints and project updates.
- Executed a cost-saving initiative by conducting hardware repairs on company devices, resulting in savings of **\$13,000** in **4 months** whilst avoiding the need for new machinery installation.

## PROJECTS

### FM Radio | Coursework

Jan 2023 – April 2023

- Applied **Digital Signal Processing** algorithms by designing and developing an FM radio system using **C++** in tandem with multi-threading protocols conducted on a **Raspberry Pi** for real-world communication systems.
- Utilized **multi-threading techniques** to manage parallel processing for audio decoding, station tuning, and real-time data handling, enhancing system responsiveness.
- Developed an intuitive **Linux-based user interface** using the **Command Line Interface (CLI)**, enabling users to identify the current song and station via virtual display, showcasing proficiency in **low-level programming** and **embedded systems development**.

### Image Decompressor | Coursework

Sep 2022 – Dec 2022

- Utilized **System Verilog** on an **FPGA** to create an image decompressor for minimizing space on a computer Drive.
- Implemented a pixel formation algorithm which efficiently adjusted the quality of images for optimal storage.

### Pacemaker DCM | Coursework

Sep 2022 – Nov 2022

- Built a Device-Controller Monitor (DCM) using **Python** that provides users with a means of remotely transmitting instructions and receiving information from their pacemaker (developed in **MATLAB Simulink**).
- Used Python Scripting to capture live heart electrogram data via **PySerial** and generated a live plot using Python's **Matplotlib** library and saving data on SQL database to provide insights & next steps to enhance patient's medical health.

### Microcontroller Scanner Project | Coursework

Jan 2022 – April 2022

- Built an embedded 3D mapping system, controlled by a **microcontroller**, to acquire information in the surrounding area as a smaller alternative to commercial Light Detection and Ranging (**LIDAR**).
- Developed a program in **C** while using a time-of-flight sensor and stepper motor to collect spatial measurements up to 3 meters and reconstructed a visual model using **Python's Matplotlib** library via **PySerial**.