

Amro Elgammal

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EDUCATION

Memorial University of Newfoundland

St. John's, NL

Bachelor of Engineering: Computer Engineering | CGPA: 4.00/4.00

Jan. 2021 – May 2025

- **Dean's List:** 2021-2022, 2022-2023, 2023-2024

EXPERIENCE

FPGA Hardware Engineer Intern

Jan. 2024 – Apr. 2024

Avalon Holographics Inc.

St. John's, NL

- Updated and maintained existing **FPGA** designs and developed test benches in **SystemVerilog** utilizing **UVM** for thorough verification and validation
- Upgraded the FPGA team's testing, debugging, and packaging scripts written in **Python** and **TCL**, automating the running of tests **saving the team 4-10 hours weekly**
- Integrated software features for the web application that interfaces with the Holographic Display using the **Django Framework (Python, HTML, CSS, JS)**
- Supported the **FPGA Board Bring-Up** process ensuring they were tested, validated and debugged successfully

Embedded Systems Research Assistant

Jan. 2024 – Present

MUN Faculty of Engineering and Applied Science

St. John's, NL

- Investigating cost-efficient motor control solutions using **Arduino**, **Raspberry Pi**, and **STM32 Nucleo** on **Windows** and **Linux**, aimed at creating an educational platform for university students
- Creating new lab content to explain the principles of PD and PID controllers, implementing control algorithms in **C++**, **Julia**, **MATLAB**, and **Simulink** to enhance student understanding

Underground Operations Engineer Intern

Aug. 2022 – Jan. 2023

Vale S.A

Voisey's Bay, NL

- Integrated technology and digital innovation in the visualization and organization of processes
- Developed and implemented **Python** scripts using **pandas** and **matplotlib** to visualize equipment performance data, leading to a **20% reduction in maintenance-related downtimes**
- Troubleshoot **SAP ECC** issues for clients and facilitated training for mining crews, ensuring they were well-versed in safety and maintenance procedures

OEM Applications Engineer Intern

Jan. 2022 – Apr. 2022

Matrox Electronic Systems

Dorval, QC

- Analysed customer requirements for software and firmware packages and contributed to the development and enhancement of **SDKs**, including **APIs**, device drivers, setup packages and sample code
- Resolved software bugs and implemented small-scale features to enhance product functionality using **C#**
- Troubleshoot, diagnosed, and resolved complex technical issues in current and legacy software and hardware, including a critical firmware bug fix that **saved the company \$1 Million in potential losses**

PROJECTS

Room Rentals Web Application | TypeScript, VSCode, Git

- Developed group management and messaging APIs for a room rental platform in an Agile environment
- Implemented unit tests for the APIs using Jest

Book Management System | Java, JavaFx, MySQL, SQLite, Eclipse, IntelliJ

- Enabled efficient personal library management by developing a system to track the status of books for individuals
- Implemented advanced search capabilities and MySQL database integration

Digital Clock on DE1-SoC FPGA Board | VHDL, Intel FPGA Board

- Developed a digital clock on the DE1-SoC FPGA board using VHDL
- Enabled user interaction through switches and keys

TECHNICAL SKILLS

Languages: SystemVerilog, VHDL, Java, Python, C/C++, SQL, JavaScript, HTML/CSS, Julia, Matlab, Bash Scripting
Developer Tools: Simulink, Questa, Quartus, Vivado, Visual Studio, PyCharm, IntelliJ, Eclipse, OpenMP, MPI, CUDA
Self-Directed Learning: CS50's Introduction to Artificial Intelligence with Python (edX/Harvard University, 2024), Machine Learning Specialization (Coursera/Andrew Ng, 2024)