

# AMRO ELGAMMAL

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## Education

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### Memorial University of Newfoundland

Jan 2021 – Jun 2025

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

St. John's, NL

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

## Experience

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### FPGA Hardware Engineer Intern

Jan 2024 – Apr 2024

*Avalon Holographics*

- Updated and maintained existing **FPGA** designs and developed test benches in **SystemVerilog**
- 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*

- Explore capabilities of **Arduino**, **Raspberry Pi** and **STM32 Nucleo** on **Windows** and **Linux**, focusing on motor control applications
- Implement control algorithms in **C++**, **Julia**, **MATLAB**, and **Simulink** to enhance student understanding of PD and PID controllers in practical applications

### Underground Operations Engineer Intern

Aug 2022 – Jan 2023

*Vale S.A*

- Integrated technology and digital innovation in the visualization and organisation of data
- Utilized **Python** libraries like **pandas** and **matplotlib** to clean and visualize production data, providing insights into equipment performance and potential maintenance needs
- Provided technical support to clients via **SAP ECC**, and supported the supervision of the mining crews and ensured they were trained in safety and maintenance courses

### OEM Applications Engineer Intern

Jan 2022 – Apr 2022

*Matrox Electronic Systems*

- 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
- Identified and resolved software bugs and implemented small-scale features to enhance product functionality using **C#**
- Troubleshooted, diagnosed and resolved technical issues in current and past software releases and hardware products, resolving a critical bug with a firmware fix **saving the company \$1 Million**

## Projects

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### Room Rentals Web Application | *TypeScript, VSCode, Git*

- Designed and implemented group management and messaging **APIs** for a room rental platform, facilitating renter collaboration and owner-renter communication while participating in an Agile management environment
- Developed and maintained **unit tests** for the APIs using **Jest** through comprehensive test cases, and implemented mock objects and testing utilities to isolate components and dependencies

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

- Created a Java-based Book Management System with JavaFX, enabling efficient book collection management for individuals and organizations
- Implemented advanced search capabilities and MySQL database integration, applying software design principles and patterns

### E-Commerce Inventory Management | *C++*

- Handled inventory tracking, stock management, and order processing. Implemented real-time inventory updates, automated stock replenishment, and order fulfillment tracking

### Scrabble Game Project | *Python, Arduino Uno*

- Designed a 2-player, competitive, timed Scrabble computer hardware interactive game using an Arduino Controller and Python