



SEMILORE KAYODE

Canadian Citizen | Design Portfolio

📞 902-221-3551 ✉ Semiore.kayode@dal.ca  [linkedin](#)  [github](#)

Education

Dalhousie University

Bachelor of Electrical and Computer Engineering

Sep. 2020 – Current

Halifax, Nova Scotia

Co-op Status: Available for a four-month co-op term starting May 2025.

Relevant coursework: Real Time Operating Systems, Operating Systems, Computer Networks and Communication, Computer Architecture, System Analysis, Data Structures and Algorithms, Microprocessors.

Experience

Surrette Battery Company Ltd.

Engineering Assistant

Sept 2024 – Dec 2024

Springhill, Nova Scotia

- Engineered a repair station to recover broken lead battery grids, mitigating material waste and delivering projected annual savings of \$4M.
- Developed quality assurance documents detailing correct welding procedures for battery terminals, designed to prevent defects that could lead to critical issues such as acid leaks, short-circuiting, and potential fire hazards.
- Effectively insulated metal-bodied lead furnaces, which operate at temperatures up to 1000°F, to reduce heat loss, enhance workplace comfort, and decrease propane consumption by 30%.
- Implemented air quality and noise level testing protocols, improved emergency signage visibility, and ensured safety standards compliance to protect employee health and safety.

Dugo Systems

Product Manager Intern

Jan 2024 – Apr 2024

Halifax, Nova Scotia

- Streamlined validation protocols, collaborating with technical experts to achieve 15% higher accuracy in battery conductance calculations, directly improving product reliability.
- Optimized database structures for rectifiers and DC plant controllers, reducing query response time by 20% and improving operational efficiency.
- Presented technical insights and project results to stakeholders, ensuring clarity and adoption of solutions.

Projects

CPU Emulator for XM23p Processor | C, Low-level Programming, Algorithm Design

May 2024 – Aug 2024

- Designed and implemented a software emulator for the XM23p processor in C, featuring a 3-stage pipelined architecture, 64 KiB Harvard-style memory management, and S-Record-based loader.
- Integrated support for arithmetic, logical, and memory-access instructions with direct and indexed addressing, and optimized control flow with branching and conditional execution (CEX).
- Debugged and validated functionality through rigorous testing, ensuring pipeline integrity and performance under diverse conditions.
- Optimized pipeline scheduling algorithms to reduce instruction latency, improving simulated CPU performance by 15%.

Dehumidifier Cluster | Python, C++, Sensor Integration, IoT Communication, Microprocessors

Sept 2024 – Present

- Designed and implemented a distributed dehumidification system in my home using MQTT for real-time communication between room-specific ESP32/ESP8266 sensors and a central Raspberry Pi 5.
- Implemented low-power mode on ESP32 WROOM boards, extending operational life by 30% and minimizing energy consumption.
- Optimized data transmission protocols to reduce latency by 20%, ensuring timely and accurate environmental monitoring across multiple locations.
- Developed algorithms to dynamically adjust dehumidifier operations based on room conditions, enhancing energy efficiency and user comfort.

Volunteering

Safe Harbour Research & Technologies

Engineering Project Volunteer

Mar 2024 – June 2024

Emera IdeaHub

- Installed and configured solar panels and charge controllers for underwater technologies at Safe Harbour Technologies, enhancing the sustainability and efficiency of energy systems.
- Evaluated and enhanced safety protocols for underwater equipment, focusing on innovative heat release methods to ensure operational safety and compliance with industry standards.
- Optimized Python code for advanced underwater technology applications, improving script readability and system performance, which facilitated more efficient project development and deployment.