

# FRANCIS MONWE

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## EDUCATION

### Brock University

2019 - 2023

Bachelor of Science (Honours) in Computer Science

GPA: 3.8/4.0 (Dean's List)

- **Relevant Coursework:** Artificial Intelligence, Data Structures & Algorithms, Object-Oriented Programming, Advanced Database Systems, Computer Architecture, C++ Programming, Software Engineering, Software Analysis & Testing
- **Awards:** Dean's Honor List (2019–2023)
- **Leadership and Activities:** Pool Club, Chess Club, Cybersecurity Club

## CERTIFICATIONS

AWS Certified Developer – Associate

May 2025

AWS Certified Solutions Architect – Associate

August 2024

## EXPERIENCE

### Software / Hardware Integration Intern

June 2025 – Present

Avicena Tech

Sunnyvale, CA

- Developed Python tools supporting next-generation microLED chip-to-chip communication bring-up, improving hardware validation workflows and strengthening software–hardware integration.
- Optimized a Python-based GUI application, significantly lowering memory footprint and CPU utilization for improved runtime performance.
- Validated middleware–firmware interfaces, power sequencing, ASIC register R/W tests, ensuring compliance/stability.
- Automated ASIC testing/STM32 firmware flashing on custom PCBs via Python, eliminating manual verification.
- Built FT232H USB-to-SPI utilities for Flash programming and analog-to-temperature conversion algorithms.
- Refactored SPI communication algorithms in optical hardware tests to cut latency; authored validation docs with scope captures, logic analyzer traces, and firmware APIs.

### Front-End Developer (Volunteer)

Jan 2023 – Apr 2023

Niagara-on-the-Lake Museum

St. Catharines, ON

- Developed reactive SvelteKit components for an interactive cross-platform timeline with real-time event handling.
- Designed responsive UI (search, dropdowns, navigation), enabling seamless content editing.
- Maintained Git/Jira/Miro workflow, streamlining team collaboration.

## PROJECTS

### AWS S3 Web Application | React, AWS S3, AWS Route 53, AWS Certificate Manager, AWS CloudFront

- Deployed a static React application using Amazon S3 with a dual-bucket architecture, applying least privilege access policies and secure public read permissions.
- Configured HTTPS via AWS Certificate Manager and CloudFront integration, ensuring encrypted end-to-end delivery of static assets.
- Implemented domain redirection policies and S3 bucket policy controls to manage access and enforce best practices for static web hosting.
- Utilized Route 53 and CloudFront for secure, scalable, and low-latency global distribution of application content.

### E-commerce Application | JavaScript, React, Git, Node.js, Express.js, MongoDB

- Built a full-stack MERN application with modular, reusable components and RESTful APIs, simulating a real-world multi-tier system.
- Integrated form validation and basic input sanitation to support secure user interactions and reduce attack surface for common vulnerabilities.
- Applied manual testing techniques to validate application functionality, laying a foundation for security testing workflows.

## SKILLS

**Languages:** C/C++, Python, Java, JavaScript/TypeScript, HTML, CSS, React, SvelteKit, Node.js

**Developer Tools:** Git, Linux, VS Code, Jira, Miro, Confluence, Notion, Figma

**Database & Backend:** PostgreSQL, MySQL, MongoDB

**Hardware:** Microcontrollers (Raspberry Pi, STM32), Oscilloscopes, Logic Analyzers, Multimeters, Sensors

**AWS:** CloudFormation, CloudFront, S3, EC2, ECS, Glue, IAM, ELB, Route 53, DynamoDB, RDS, Certificate Manager