

FRANCIS MONWE

+1(704) 956-8340 | monwefrancis@live.com | linkedin.com/in/francis-monwe | https://github.com/monwe-jr

EDUCATION

Brock University

Bachelor of Science (Honours) in Computer Science

2019 - 2023

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