

YOUSSEF HALAWCHE

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Calgary, AB | Permanent Resident

EDUCATION:

Software Development Diploma — *Southern Alberta Institute of Technology (SAIT) — Calgary, AB* | May 2025 – August 2026 (Expected)

- Relevant coursework: Web Systems, Application Development, Database Systems, OOP, Agile/SDLC
- Focus: Full-Stack Web Development, Systems Architecture, and Object-Oriented Programming.
- Capstone Project for an international industrial technology company.

Computer Science (2 Semesters) — *Memorial University of Newfoundland — St. John's, NL* | Jan 2024 – Sep 2024

- Transferred to SAIT to pursue applied, industry-focused software development training
- Relevant coursework: discrete mathematics, Algorithms, Linux programming

SKILLS:

Languages: Java, C#, JavaScript / TypeScript, Python, C, SQL, Rust, Kotlin

Frameworks & Libraries: Nextjs, .NET / .NET MAUI, Spring Boot, Django, React Native, React, Astro, Node.js, OpenGL, WebGL

Tools & Cloud: Git / GitHub, Firebase, Supabase, Docker, Azure, Linux, npm, REST APIs, NUnit, Oracle, Vim

Concepts: Clean Architecture, State-Driven Programming, Test-Driven Development, Agile Methodologies, SDLC, Data Structures, OOP, Event-Driven Programming, Algorithms & Complexity Analysis, Cloud Computing, AI & Emerging Tech

EXPERIENCE:

Technical Lead | DIVU Canada Ltd. — Capstone Project *Calgary, AB • Jan 2026 – Present*

- Led a team of 5 developers through the full SDLC, owning technical direction from architecture diagrams and requirements gathering through to prototype delivery
- Designed system architecture for a Secure-by-Design Industrial IoT Analytics Platform, including Clean Architecture layering, data flow diagrams, and a five-service Docker Compose topology
- Architected data pipelines capable of handling real-time ingestion from multiple concurrent industrial sensor streams via MQTT
- Enforced security best practices across the platform including JWT authentication, BCrypt password hashing, and an insert-only audit log for full traceability

Grocery Clerk | Safeway *Calgary, AB • Jan 2025 – Present*

- Maintained consistent performance and punctuality in a fast-paced, customer-facing environment while managing full-time studies

PROJECTS

Zenith Analytics — Industrial IoT Platform — *Capstone | DIVU Canada Ltd. | Jan 2026 – Present*

Stack: *React 18, Vite, ASP.NET Core 8, PostgreSQL, Entity Framework Core, Python, MQTT, Azure, Docker*

- Full-stack industrial IoT platform tracking OEE, production runs, sensor data, downtime, and audit logs
- Clean Architecture backend with JWT auth, insert-only audit logging, and five-service Docker Compose setup
- Real-time React dashboard for live KPI visualization; Python MQTT worker for sensor data ingestion

PlayPort — Wireless Virtual Gamepad — *Personal Project | Dec 2025*

Stack: *Rust, Kotlin, Jetpack Compose, TCP/UDP*

- Designed and shipped a full end-to-end wireless gamepad system with a Kotlin/Jetpack Compose Android client communicating over a custom binary TCP/UDP protocol to a Rust server on Linux
- Emulates a virtual gamepad at the OS level via uinput Linux kernel module, enabling seamless compatibility with any Linux game or application without additional configuration
- Packaged and published the server to the AUR and distributed a signed APK — handling the full open source release pipeline solo from build system to end-user installation

Euphrates Engine — 3D Graphics Engine — *Personal Project | Jan 2024 - Jan 2026*

Stack: *Rust, Rust FFI, OpenGL*

- 3D graphics engine from scratch including camera system, texture pipeline and error handling
- Handled rendering mathematics with matrix arithmetic and precise FrameBuffer size calculation
- Implemented OpenGL 4.4 debug instrumentation using unsafe Rust FFI, bridging C-compatible callbacks to Rust, handling raw pointer dereferencing across the FFI boundary safely

EXTRACURRICULAR & COMPETITIONS

Hack-The-Planet CTF — Team CrossBones — *Cybersecurity Competition | March 2026*

- Placed Top 13 among competing teams
- Challenges completed: forensics, reverse engineering, web exploitation, Malbolge/x86 bootloader analysis, ESP32 firmware XOR decoding, Logic puzzles

Team SecondPulse — *Hackathon | Jan 2026*

Stack: *React Native, Supabase backend*

- Placed Top 6 Finalist out of 42 teams in an intensive time-constrained hackathon built around the theme of community
- Built SecondPulse, a mobile support app for recovering addicts
- Implemented anonymous authentication as a deliberate privacy-first design decision to lower the barrier to entry for vulnerable users
- Coordinated a remote team across the full development cycle, driving alignment on scope, design, and delivery under tight time pressure

