

# Charbel Maroun

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## EDUCATION

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**University of Calgary** - Bachelor of Software Engineering Co-op - **Dean's List**

**Expected:** Apr 2027

**Certifications:** AWS Data Engineer (Aug 2025), AWS Cloud Practitioner (Jul 2024)

**GPA:** 3.8/4.0

**Research Publication:** Digital Twin for Pipeline Leak Simulation [*paper*]

## WORK EXPERIENCE

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### Software Engineering Intern

Calgary, AB

**Pason Systems** | *Python, Java, Bash, Linux, Docker, AWS*

May 2025 – May 2026

- Developed **Python** and **Java** automation tools to reduce downtime by **45%** across **1,000+** **Linux** systems
- Engineered scripts for **Splunk** logging and data visualization, eliminating field tech visits which led to saving **\$100K/month**
- Migrated legacy **CI/CD** workflows to **AWS EC2** containers, cutting deployment time by **90%** without any major outages
- Implemented **integration/regression** testing within **CI** pipelines, reducing post-deployment incidents by **98%**

### Backend Engineering Intern

Calgary, AB

**HXI Research Lab** | *Python, C++, Kafka, Redis, DynamoDB, WebSockets*

Jan 2025 – May 2025

- Designed and deployed a scalable backend on **AWS** to support real-time telemetry ingestion, handling **7,000+** **req/sec**
- Initiated migration to **Kafka** to buffer bursty telemetry and **decouple ingestion**, stabilizing peak-load latency by **70%**
- Optimized **DynamoDB** data models and partitioning strategy, reducing request latency from **500 ms** to **100 ms**
- Introduced caching using **Redis** for high-read access patterns, which reduced database read traffic by **40%** and AWS bills

### Full Stack Developer

Calgary, AB

**GenRep AI** | *React, JavaScript, Node.js, Express, AWS, DynamoDB*

May 2024 – Aug 2025

- Led a team of **five** engineers through design, implementation, and deployment of a **full-stack** meeting automation platform
- Enhanced **REST APIs** with features such as cursor/offset-based pagination, retry mechanisms, caching strategies, and JWT authentication. This increased performance by **65%** and strengthened security
- Architected **SQL** and **NoSQL** schemas using **AWS RDS/DynamoDB**, reducing write latency by **60%** under peak load

## AWARDS & HONORS

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- **IEEE ICAC 2025 Workshop** - Presented research paper in **South Korea** to **200+** international researchers
- **Iron Man 2024** - Tackled a **226 KM triathlon** to prove my younger self you can accomplish anything (**Lost 160 lb**)
- **3 x Hackathon Winner** - Hack the Change 2025 (**\$2700**), Platform Calgary ( Admitted to **incubator**), BioHacks 2025

## TECHNICAL PROJECTS

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**Jira Automation Engine** | *Python, Next.js, LangChain, LangGraph, Pinecone, MySQL*

Dec 2025 - Jan 2026

- Built a multi **agentic** AI workflow that automated Jira tasks using **RAG** and **vector** search to contextualize information

**Virtual Quake** | *JavaScript, Python, Next.js, AWS, PyTorch, XGBoost*

Nov 2025 - Dec 2025

- Trained a ML model to simulate **earthquake** damage for pre-constructed building reaching an accuracy of **84%**

**LeetForcer** | *Rust, TypeScript, Tauri, React, PostgreSQL*

Aug 2025 - Present

- Developed an OS-level forcer that locks the system at random intervals to drive task completion; currently at 500+ users

## TECHNICAL SKILLS

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**Languages:** Python, Java, C/C++, TypeScript, JavaScript, SQL, Bash

**Frameworks:** Next.js, React, Angular, Node.js, Express, Spring Boot, Flask, FastAPI, LangGraph

**Tools & Infrastructure:** Git, AWS, Docker, Jenkins, Kafka, Redis, WebSockets, Linux/Unix, DynamoDB, PostgreSQL