

Charbel Maroun

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EDUCATION

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

Expected: Apr 2027

Extra 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

Pason Systems

Calgary, AB

Software Engineering Intern | **Python, Java, Bash, Linux, Docker, AWS**

May 2025 – Present

- Automated **Linux** environments to align with **Pason** standards, improving system reliability and reducing downtime from **3 hours to 30 minutes** across **1,000+ systems**
- Engineered scripts for **Splunk** logging and telemetry, eliminating field tech visits and saving **\$100K/month**
- Migrated **CI/CD** pipelines to **Dockerized AWS EC2** environments using **GitHub Actions**, eliminating **weekly failures**
- Implemented **integration/regression** testing within CI pipelines, reducing post-deployment incidents by **98%**

HXI Research Lab

Calgary, AB

Backend Engineering Intern | **Python, C++, Kafka, Redis, DynamoDB, WebSockets**

Jan 2025 – Aug 2025

- Designed and deployed a scalable backend on **AWS** to support real-time telemetry ingestion, handling **7,000 req/sec**
- Built **Kafka** pipelines to buffer bursty telemetry traffic and smooth DynamoDB writes, stabilizing latency under peak load
- Optimized **DynamoDB** data models and partitioning strategy, reducing request latency from **500 ms to 100 ms**
- Introduced **caching** for high-read access patterns, reducing database read traffic by **40%** and lowering **AWS** costs

GenRep AI

Calgary, AB

Founding Engineer | **React, JavaScript, Node.js, Express, AWS, DynamoDB**

Jul 2024 – Feb 2025

- Led a team of **five** engineers to deliver a scalable **full-stack** web and **cloud** platform for real-time meeting automation
- Designed and implemented **REST APIs** using **Node.js** and **Express**, validated through load testing at **10K req/sec**
- Architected a **secure** frontend with role-based authentication, session management, and protected routing, enabling **enterprise-grade** access control across the platform

AWARDS & HONORS

- IEEE ICAC 2025 Workshop** — Presented in **South Korea** to **200+** international researchers
- 3× Hackathon Winner** - Hack The Change YYC (**\$4,700**) 2025, Code the Change 2024 (**\$2,000**), BioHacks 2025
- Platform Calgary Early Incubator** — GenRep AI accepted into a competitive startup accelerator
- President, Space Rover Club** — Led a multi-division engineering team to **third** place at the 2024 Rover Competition

TECHNICAL PROJECTS

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

Sep 2025

- Built an **agentic** AI system that automated Jira workflows and was **pitched to and adopted by Pason Systems**
- Integrated **retrieval-augmented search** across **10K+** documents, improving accuracy from **65% to 80%**
- Orchestrated a **multi-step** pipeline with tool orchestration and self-verification; reduced **hallucination** from **20% to 5%**

TECHNICAL SKILLS

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