

# 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