

# Charbel Maroun

github.com/Charbel12323 • linkedin.com/in/charbel-maroun-uofc

Email: charbel.maroun@ucalgary.ca

Phone: +1 (825) 488-0972

## EDUCATION

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**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

## WORK EXPERIENCE

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### Pason Systems

Calgary, AB

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

May 2025 – Present

- Deployed automation reducing system downtime from **3 hours to 30 minutes** across **1,000+** production **Linux** 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, MongoDB, WebSockets

Apr 2025 – Aug 2025

- Built a real-time hydrogen-pipeline **digital twin** that improved leak-detection accuracy from **78% to 84%**
- Designed a **scalable** backend for live telemetry processing, sustaining **7,000+ req/sec** under **production-level** load
- Re-architected **time-series** data pipelines handling **15M+** events, cutting latency from **500 ms to under 100 ms**

### GenRep AI

Calgary, AB

**Founding Engineer** | Python, JavaScript, React, AWS Lambda, DynamoDB

Jul 2024 – Feb 2025

- Led a team of **5** engineers to architect and deliver a scalable **cloud** platform for real-time meeting automation
- Designed and load-tested an **event-driven** backend, sustaining **5,000 req/sec** under simulated production traffic
- Implemented **real-time** transcription and **RAG** pipeline, improving action item extraction accuracy from **60% to 90%**

## AWARDS & HONORS

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- IEEE ICAC 2025 Workshop** — Presented in **South Korea** to **200+** international researchers
- 3x 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

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### Jira Automation Engine

Sep 2025

- | Python, Next.js, LangChain, LangGraph, Pinecone, MySQL
- 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%**

### Virtual Quake

Nov 2025

- | JavaScript, Python, Next.js, AWS, PyTorch, XGBoost
- Built a **physics-based** earthquake simulation engine supporting **80+** structural scenarios, enabling large-scale stress testing
  - Parallelized simulation workloads across a **cloud** cluster, reducing per-scenario runtime from **20 minutes to 6 minutes**

## TECHNICAL SKILLS

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

**Backend & Architecture:** Microservices, distributed systems, event-driven pipelines (Kafka), scalable APIs

**Cloud & Infrastructure:** AWS, Azure, Docker, Kubernetes, GitHub Actions, Linux, Git; observability & monitoring