

# Anish Pokhrel

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## EDUCATION

### University of Calgary

Bachelor of Science in Computer Science

Expected Grad April 2027

## EXPERIENCE

### SAP

May 2026 – August 2026

Software Developer Intern

- Migrated Concur Travel AI rule-generation engine from Claude to GPT-5 to cut inference cost by 30% and latency by 40% while maintaining output quality via a custom LLM benchmark evaluation framework.
- Shipped a bulk edit feature end to end (React, Go, GraphQL Typescript, Redis, AWS) allowing 2M+ customers to apply policy changes with a single action.
- Delivered a deep copy policy duplication feature in the Concur Admin UI, eliminating the need for manual policy recreation for admins managing many traveler groups and configurations for 40,000+ enterprise clients.
- Removed N+1 query bottlenecks by designing a batched GraphQL resolver in Go to create a standardized data layer adopted by 4 production features.

### Accenture

June 2025 – August 2025

Solutions Architect Intern

- Developed AWS architecture for a RAG-based AI Trading Assistant serviced by Amazon OpenSearch (Vector DB) and OpenAI GPT-4.1, projected to improve trading efficiency by 40% by grounding LLM responses.
- Designed an agentic Hierarchical Multi-Agent Architecture where a central "Supervisor" agent orchestrated specialized sub-agents via MCP agents and LangChain to break down queries for a more accurate output.
- Built a document ingestion pipeline using LangChain for chunking PDFs and embedding them using OpenAI embeddings into the vector index for efficient retrieval.

### Teck Resources

September 2024 – April 2025

Software Developer Intern (Telemetry Systems)

- Cut \$117K in annual infrastructure cost by designing a tiered storage architecture for a C# forwarder to route hot telemetry to on-prem InfluxDB (NoSQL) for low-latency access and streams to Event Hubs for low cost Delta Lake storage.
- Built Apache Spark (PySpark) ETL pipelines on Azure Databricks that ingested 5,000 vehicle telemetry events per minute from Azure Event Hubs (Kafka), transforming raw streams into partitioned Delta Lake tables.
- Created real time health monitoring with Prometheus and Grafana dashboards for onsite engineers to monitor system metrics for faster incident detection.

## PROJECTS

### Aegis AI - Threat Detection System | Python, React, AWS (Bedrock, EC2), Docker, Claude, YOLOv8

- Won "Best Use of AI" at Hack the Change 2025 by building a real-time AI agent that notifies incidents to transit operators via live CCTV footage within 800 milliseconds to 1 second.
- Built a PyTorch YOLOv8 machine learning pipeline in Python (FastAPI) that processes 24 frames per second per stream, filtering 90%+ of non incident frames to surface only high-priority safety alerts.
- Integrated AWS Bedrock (Claude) to generate natural language summaries of captured frames, deployed full backend architecture on AWS EC2 instance.

### Parking Lot Finder for UofC | React (TypeScript), FastAPI, PostgreSQL (TimescaleDB), Redis, Docker, Mosquitto

- Built a MQTT ingestion pipeline using FastAPI (aiomqtt) and Eclipse Mosquitto, achieving 100ms publish-to-client latency by broadcasting occupancy updates over native FastAPI WebSockets to React clients across 200 sensor nodes.
- Cut sensor history storage by 94% over standard PostgreSQL by modeling occupancy readings as a TimescaleDB hypertable with automatic chunk partitioning, preserving full SQL queryability for zone-level occupancy trend analysis.
- Handled 70 MQTT publishes per second by caching per-sensor occupancy state in Redis for fast lookups, decoupling ingestion throughput from WebSocket fan out across a Docker Compose deployment.

## TECHNICAL SKILLS

**Languages:** Python, Java, Go, TypeScript, JavaScript, C++, C#, SQL

**Frameworks & Libraries:** React, Node.js, TensorFlow, PyTorch, LangChain, Apache Spark

**Cloud, DevOps, Data:** AWS (EKS, Lambda, SQS), Azure (Event Hubs, Stream Analytics), Docker, Kubernetes, Databricks

**Databases:** PostgreSQL, Redis, InfluxDB

**Certifications:** AWS Certified Solutions Architect – Associate (SAA-C03)