

Morteza (Mort) Mogharrab

Software Architect · AI Systems · Industrial Applications

Calgary, AB | (780) 238-2524 | morteza.mgb@gmail.com | [linkedin.com/in/morteza-mogharrab](https://www.linkedin.com/in/morteza-mogharrab) | morteza-mogharrab.github.io

Summary

Software architect specializing in AI-powered operational platforms for Alberta's industrial sector. Master's in Computing Science, 4.0 GPA, University of Alberta. Currently building the complete technical infrastructure at Entrek Engineering — full-stack, cloud-deployed, production AI extraction pipelines. Previously scaled Piko Digital's platform to 1,000+ daily active users as software engineer.

Professional Experience

Software Systems & AI Developer – *Entrek Engineering Ltd., Calgary, AB* Apr 2026 – Present

Sole engineer responsible for complete technical infrastructure:

- Designed and deployed full-stack operations portal covering project management, procurement, bid analysis, invoices, field tickets, documents, and AI extraction — production on AWS in < 3 months.
- Implemented 6 AI extraction engines (OpenAI GPT-4 Vision) with concurrent batch processing, OCR preprocessing, and structured output.
- Built P&ID Copilot module parsing DXF engineering drawings via LLM agent.
- Architected staging + production AWS environments (EC2, RDS, S3, Route 53) with Docker, Nginx TLS 1.3, and feature flag deployment.

Independent Software Engineer & AI Integrator – *Independent Practice, Edmonton, AB* Sept 2025 – Apr 2026

Applied R&D period building domain-specific AI systems for Alberta's industrial sector:

- **AER Compliance Agent:** LangChain agentic system orchestrating 7 tools (ChromaDB RAG, equipment DB, email, calendar, maintenance logging) to execute autonomous compliance audits. Cut audit cycles from 2 hours to 30 seconds.
- **LLM Document Intelligence Pipeline:** Hybrid inference engine processing 1,000+ structured records concurrently across OpenAI, Anthropic, and local Ollama backends. 450+ records/minute with thread-safe rate limiting.
- **Marketing Automation:** n8n pipeline integrating Gemini and GPT-4 Vision — 200+ assets/day, 97.5% cost reduction vs. manual production.

Full Stack Software Engineer (Core Platform) – *Piko Digital Ltd., Edmonton, AB* May 2024 – Aug 2025

Software engineer responsible for the entire platform — microservice architecture, frontend, mobile, data layer, and operations:

- Scaled platform to 1,000+ daily active users through microservice architecture and full-stack ownership.
- Built real-time analytics dashboard aggregating 15+ data sources → 300% increase in platform intelligence.
- Automated JWT auth + RBAC user governance → 60% reduction in administrative processing time.
- Architected 50+ reusable React Native/TypeScript components for iOS, Android, and web → 40% faster dev cycles.
- Mentored 3 interns, authored 20+ technical SOPs → 40% faster developer onboarding.

Technical Skills

- **Core Engineering:** React, TypeScript, Python, FastAPI, Java Spring Boot, PostgreSQL, REST APIs, Docker
- **AI & Data:** LangChain, RAG Pipelines, ChromaDB, OpenAI, Anthropic, Tesseract OCR, ETL
- **Infrastructure:** AWS (EC2, RDS, S3, Route 53), Nginx, Alembic, CI/CD

Education

University of Alberta – *Master of Computing Science, Multimedia*

Sept 2023 – Apr 2025

GPA: 4.0/4.0 | Award: Graduate Community Engagement Award (Mar 2025)