

# CHIN WEI (AIDEN) MAK

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## EDUCATION

### University of Manitoba

Bachelor of Science (Honours), Computer Science

Winnipeg, MB

June 2025

## AI ENGINEERING PROJECTS

### HR Intelligence Platform | AI Engineer

Feb 2026 – Present

*LangGraph • Model Context Protocol (MCP)/FastMCP • OpenAI • Gemini • ChromaDB • Sentence Transformers • Flask • PostgreSQL • Redis • Docker • GCP Cloud Run*

- Shipped 8-agent enterprise HR platform to production on GCP Cloud Run with 1,909 automated tests (Pytest + Playwright E2E), Docker containerization, and real-time observability via Prometheus and Grafana.
- Architected LangGraph multi-agent orchestration with conditional routing, shared state, and fault-tolerant workflows across policy Q&A, leave management, compliance auditing (GDPR/CCPA/HIPAA), and workforce analytics.
- Implemented Model Context Protocol (MCP) server via FastMCP exposing 28 tools, 8 resources, and 5 prompts, enabling standardized LLM-to-tool integration with BambooHR connector for live HRIS data.
- Built hybrid RAG pipeline combining ChromaDB vector store with Sentence Transformers embeddings for context-aware policy document retrieval across 101 Python modules.
- Designed end-to-end CI/CD pipeline with automated linting, type checking, and multi-stage Docker builds, maintaining production reliability across continuous deployments.

### The Golden Fork | Full-Stack AI Developer

Jan– Feb 2026

*OpenAI API • Pinecone • RAG • Next.js • TypeScript • PostgreSQL • Stripe • WebSocket • Render*

- Engineered RAG-driven recommendation engine using OpenAI embeddings and Pinecone vector search, delivering dietary-aware menu suggestions with sub-second retrieval latency.
- Built end-to-end order pipeline with Stripe webhook-driven checkout and WebSocket real-time kitchen display for live order tracking across multiple concurrent sessions.
- Created manager analytics dashboard with sales velocity metrics and menu engineering insights; deployed full platform live on Render with PostgreSQL persistence.

### Human Rights AI Platform (CMHR + Independent Research) | AI Developer

Sept 2024 – Oct 2025

*Gemini Flash 2.0 • LangGraph • LangChain • ChromaDB • Sentence Transformers • Flask • NLP*

- Partnered with Canadian Museum for Human Rights via University of Manitoba to build LLM-powered educational platform using Gemini Flash 2.0, with adaptive prompting and NLP-driven content personalization across 6 interactive learning modules.
- Independently designed LangGraph multi-agent workflow orchestrating 5 specialized tools for legal document analysis with conditional routing across 25+ human rights documents.
- Achieved 97% API response speedup (6.8s to 0.2s) by engineering standalone RAG pipeline with ChromaDB processing 112 document chunks through embedding optimization and caching.

## TECHNICAL SKILLS

**AI / ML:** Multi-Agent Systems, LangGraph, LangChain, MCP (FastMCP), RAG Pipelines, Prompt Engineering, OpenAI API, Gemini, ChromaDB, Pinecone, Sentence Transformers

**Programming:** Python (advanced), TypeScript, JavaScript, Java, C/C++, SQL

**Full-Stack:** Flask, Next.js, React, Node.js, PostgreSQL, Redis, SQLAlchemy, REST APIs, WebSocket, Stripe, Tailwind CSS

**Infrastructure:** Docker, Google Cloud Run, CI/CD, Git, Linux, Prometheus, Grafana, Playwright, Pytest

**Practices:** Agile/Scrum, Test-Driven Development, SOLID Principles, Object-Oriented Design, Code Review

**Languages:** Cantonese (native), Mandarin (fluent), English (fluent)