

# Chin Wei (Aiden), Mak

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## EDUCATION

### University of Manitoba

Winnipeg, MB

*Bachelor of Science, Honours Computer Science – GPA: 3.5*

Sep 2021 – Jun 2025

**Relevant Coursework:** Software Engineering, Databases, Distributed Computing, Data Structures & Algorithms, Operating Systems, Artificial Intelligence, Machine Learning

## TECHNICAL SKILLS

**Languages:** Python, TypeScript, JavaScript, SQL, HTML/CSS, Java, C/C++

**Frameworks:** React, Next.js, Node.js, Flask, FastAPI, Express, Tailwind CSS, LangChain, LangGraph

**Databases & Infrastructure:** PostgreSQL, Redis, Pinecone, ChromaDB, Docker, GCP Cloud Run, CI/CD (GitHub Actions), Git

**Testing & Practices:** Pytest, Playwright (E2E), REST API Design, Microservices, WebSocket, Agile/Scrum, Prometheus, Grafana

**AI & Tools:** LLM Integration (OpenAI, Gemini), RAG Pipelines, MCP (Model Context Protocol), Prompt Engineering, AI-Assisted Development, AI Agent, Multi-agent, Agentic Workflow

## PROJECTS

### Human Resource Agent Platform – Full Stack Developer

GitHub | Live Demo | Jan-Feb 2026

*Python, Flask, React, LangGraph, PostgreSQL, Docker, GCP*

- Architected a **modular microservices-style platform** with 101 Python modules and 8 specialized service agents, implementing **RESTful API** endpoints with Flask and **PostgreSQL** for persistent data storage
- Built comprehensive **CI/CD pipeline** with **Docker** containerization and deployed to **GCP Cloud Run**, configuring automated testing, health checks, and zero-downtime deployments
- Implemented 1,909 automated tests (**Pytest** unit + **Playwright E2E**) across 101 modules, achieving 90%+ code coverage and integrating **Prometheus/Grafana** for production observability
- Designed tool orchestration layer using **MCP (Model Context Protocol)** with 28 tools, 8 resources, and 5 prompts, enabling **scalable** inter-service communication and conditional workflow routing via **LangGraph**

### Golden Fork – AI Restaurant Platform – Full Stack Developer

GitHub | Live Demo | Jan-Feb 2026

*Next.js, TypeScript, Node.js, Pinecone, Stripe, WebSocket*

- Engineered a full-stack **Next.js / TypeScript** web application with **server-side rendering**, dynamic routing, and responsive UI built with **Tailwind CSS** serving concurrent users
- Designed and integrated **REST APIs** for user authentication, menu management, and order processing with **Stripe** payment integration handling secure checkout flows end-to-end
- Implemented **real-time** order tracking and notifications using **WebSocket** connections, ensuring low-latency bidirectional communication between client and server
- Built a **RAG pipeline** with **Pinecone** vector database for semantic restaurant search and AI-powered recommendations, optimizing query response time through embedding-based retrieval

### Human Right agentic RAG System – Full Stack Developer

GitHub | Demo | Oct-Nov 2025

*Python, Flask, LangGraph, ChromaDB, SQLAlchemy, Pytest*

- Developed a **Python/Flask** backend application with **SQLAlchemy ORM** and **RESTful API** design, processing 25+ legal compliance documents with structured data pipelines and clean separation of concerns
- Built a **RAG (Retrieval-Augmented Generation)** pipeline chunking 112 document segments into **ChromaDB** vector store, reducing API response latency by 97% (6.8s to 0.2s) through efficient **caching and retrieval**
- Designed **5-tool workflow orchestration** system using **LangGraph** with conditional routing, state management, and fault-tolerant error handling for complex multi-step processes
- Wrote comprehensive test suites with **Pytest**, implemented structured logging, and maintained clean **Git** branching workflow with modular code architecture following **software engineering best practices**

## INDUSTRIAL EXPERIENCE

### Canadian Museum for Human Rights – Software Developer

Sep 2024 – Apr 2025

*University of Manitoba Partnership*

- Developed an interactive educational web application using **Flask** and **Python**, integrating **Gemini LLM API** to power 6 learning modules with NLP-driven content generation
- Collaborated in an **Agile/Scrum** team with designers and product stakeholders, delivering iterative releases and maintaining clean, well-documented codebase

## INTERESTS

Coffee, Hiking, Travelling, Badminton, Open Source, Vibe Coding, System Design