DESMOND CHOW

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PROFESSIONAL EXPERIENCE

Freelance Full-Stack Web & AI Developer May 2024 - Present

- Built an AI operating system for SMEs unifying accounting, scheduling, analytics, and CMS in one platform, automating workflows
- Delivered 6+ production applications across multiple industries, leading a team of 3 through requirements, system design, full-stack build, deployment, and maintenance
- Shipped corporate sites, custom CMS platforms, and operational dashboards for profit tracking and scheduling, managing multiple client engagements concurrently

PROJECTS

Veluate – AI-Powered Teacher Evaluation with Multi-Agent Video Analysis (https://github.com/desraymondz/Veluate)

- Architected a multi-agent LangGraph pipeline mapping lecture delivery with student exam performance gaps
- Engineered timestamped confusion heatmaps and evidence-clip retrieval over VideoDB-indexed lectures, plus a Bright Data SERP agent fact-checking lecture claims against live sources
- Built a provider-agnostic LLM layer (Anthropic, Kimi, OpenAI) on async FastAPI + Next.js, enabling runtime model swaps

iMet – Multimodal AI Contact Capture and Semantic Recall PWA (https://github.com/desraymondz/imet)

- Built a self-hosted PWA that fuses business card OCR, voice memo transcription and free text into one contact profile, enabling recall by natural language description rather than exact name lookup; React (Vite) + FastAPI + PostgreSQL with pgvector, containerised with Docker Compose
- Designed and ran a seven-phase evaluation harness covering ASR, OCR, profile generation, query understanding, retrieval, generation and end-to-end, using LLM-as-judge and human verification

Desmond AI Assistant – RAG-Powered Portfolio Assistant (https://ai.desmondintech.page/)

- Built a structured-output router over a three-provider stack (Gemini for query rewriting, GPT-4o-mini for routing, and Claude for answering), selecting retrieval, contact, or refusal per query
- Grounded every answer in top-3 chunks filtered by distance threshold, short-circuiting to an explicit not-found reply when nothing qualifies, with per-chunk citations returned to the user
- Deployed a FastAPI, ChromaDB, and LangChain stack to AWS EC2 via Docker Compose with automated CI/CD

NutritionLM – AI-Powered Nutrition Companion for Smarter Eating (https://github.com/desraymondz/NutritionLM)

- Won 1st Place at the UOL-CSSC Hackathon by engineering food logging and nutrition detection using the Google Gemini AI SDK with LLM-structured outputs to convert unstructured meal inputs into precise nutritional data, eliminating manual tracking
- Designed the PostgreSQL schema on Supabase and built server-action APIs covering user onboarding, preference management, food logging, and analytics, supporting a scalable multi-feature platform
- Implemented Google OAuth via Supabase Auth and applied prompt engineering safety guardrails to ensure responsible, user-safe AI behaviour across all dietary interactions

EDUCATION

University of London – SIM Global Education Sep 2023 - Sep 2026

Bachelor of Science (Hons) in Computer Science (Machine Learning and AI)

- **Academic Standing:** Expecting First Class Honours (Current Average: 82.12%)
- **Scholarship:** Recipient of the SIM Academic Excellence and Leadership Scholarship 2025

CCA & LEADERSHIP EXPERIENCE

Technical Director – SIM IT Club May 2025 - Present

- Designed and delivered a 5-month curriculum taking 34 members from web fundamentals to deploying a full-stack Next.js app.
- Led technical direction for 10 project teams delivering internal tools and hackathon platforms (admin, judging, sponsor, voting, leaderboard), guiding architecture and development practices for a live event serving more than 100 participants
- Mentored subcommittee members into first-time workshop speakers, expanding Git, GitHub, React, and Next.js training capacity

SKILLS

- **Software Development:** Python, JavaScript, TypeScript, Java, PHP, C++, React, Next.js, Payload, Vite, Node.js, Express, Spring Boot, FastAPI, Docker, AWS EC2, Azure VM, Google Cloud Storage, Firebase, Supabase, MySQL, PostgreSQL, Git, CI/CD, Agile
- **AI & Machine Learning:** LangChain, LangGraph, Agentic RAG, ChromaDB, Azure AI Foundry, Claude Code, Codex, Cursor, n8n
- **Language:** English, Bahasa Indonesia, Chinese

CERTIFICATIONS

- **Microsoft Certified: AI-901 Azure AI Fundamentals** Jun 2026
- **AWS Certified Cloud Practitioner** Jun 2026
- **IBM AI Engineering** Jan 2026
- **IBM Data Science Professional Certificate** Jul 2025