

DESMOND CHOW

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PROFESSIONAL EXPERIENCE

Freelance Web Developer

May 2024 - Present

- Built and deployed 6+ production web applications across multiple industries, including corporate websites, custom CMS solutions, and operational dashboards supporting invoicing, scheduling, analytics, profit tracking, etc.
- Led end-to-end project delivery, covering requirements analysis, system design, full-stack development, cloud deployment, and ongoing maintenance while managing multiple client engagements concurrently.
- Advised clients on digital transformation, business process optimisation, and web strategy, translating operational requirements into scalable solutions focused on SEO, GEO, performance, and conversion-oriented user experiences.

PROJECTS

Desmond AI Assistant (<https://ai.desmondintech.page/>)

- Engineered an Agentic RAG system with intent-aware tool routing, allowing autonomous selection of retrieval, contact, or refusal workflows based on user queries.
- Leveraged FastAPI, ChromaDB, and LangChain for orchestration and knowledge retrieval, with end-to-end deployment on AWS EC2 using Docker Compose, automated CI/CD, and scalable production infrastructure.

TeamSync – AI-Powered Client Portal with Automation for Dev Teams (<https://github.com/desraymondz/TeamSync>)

- Architected an end-to-end LLM automation pipeline triggered by GitHub webhooks, feeding commit context into an AI summariser that generates structured video scripts and PDF progress reports
- Built automated video generation using OpenAI TTS for narration and FFmpeg for rendering, producing shareable client update videos without manual effort
- Integrated Puppeteer for headless browser automation, enabling programmatic screenshot capture and structured PDF report generation at scale

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

- Secured 1st Place at 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

EDA – Indonesia's Inflation and Investor Benchmark Analysis (<https://eda-indonesia-macro.vercel.app/>)

- Aggregated and cleaned multi-source financial datasets (World Bank API and exchange rate CSVs) across 5 currencies over 23 years using Pandas, ensuring consistency and reproducibility
- Built interactive visualisations with Matplotlib and Plotly and derived a benchmark ROI model designed for retail investors to benchmark returns against inflation and currency devaluation

EDUCATION

University of London – Singapore Institute of Management

Sep 2023 - Sep 2026

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

- **Academic Standing:** On track for First Class Honours (Current Average: 81.94% | GPA: 4.0/4.0)
- **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 web development curriculum for 34 members, covering HTML, CSS, JavaScript, React, Next.js, Supabase, and Vercel, progressing from web fundamentals to full-stack application development
- Led the technical direction of 10 project teams, providing guidance on architecture, development practices, and project execution
- Organised and facilitated technical workshops on Git, GitHub, React, and Next.js to strengthen student's technical competency.

SKILLS

- **Software Development:** JavaScript, Typescript, Java, PHP, C++, React, Next.js, Payload, Vite, Node.js, Express, Spring Boot, Docker, AWS, Google Cloud, Firebase, Supabase, MySQL, PostgreSQL
- **Machine Learning & AI:** Python, LangChain, ChromaDB, RAG Pipelines, Agentic RAG
- **Language:** English, Bahasa Indonesia, Chinese

CERTIFICATIONS

- **AWS Certified Cloud Practitioner**
- **IBM AI Engineering**