

# MATTHEW LOH YET MARN

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## Education

### Inti International College Penang

Penang, Malaysia

Bachelor of Science with Honors in Computer Science in collaboration with Coventry University

AUG2022 - AUG2025

Cumulative Average: 80.50 / 100 (First Class Honors)

(Convocation: 13th November 2025)

## Professional Experience

### Deloitte Consulting SEA

Penang, Malaysia

Technology Analyst Intern (Software Development)

JAN2025 - APR2025

- Enhanced an internal Resource Management System (React, JavaScript, Java, Spring Boot) through full-stack feature development, bug resolution, and improved code maintainability of a 15+ junior developer codebase.
- Spearheaded frontend modernization via migration to Vite from deprecated Create React App / Webpack build system, improving developer velocity and reducing build time bottlenecks by up to 60% on lower end machines.
- Refactored monolithic React and Java Spring Boot code files to clean, organized components, cutting per-file LoC by up to 70% to significantly condense development timelines via easier code reviews, feature extensibility and maintainability.
- Developed a data visualization dashboard with filter/sort Recharts-based visualizations requested by the senior manager, also optimizing existing Redux code which improved UI performance and resolved major React rendering issues.
- Architected and implemented Spring Boot microservice patterns for dashboard analytics and improved backend business-level constraints, refining SQL function queries, and completing missing CRUD operations and validation.

## Projects

### Pragmadic

| Next.js, TypeScript, React, Supabase, Drizzle, Vercel AI SDK, LLMs

Final Year Project - www.pragmadic.com

APR2024 - Present

- Developed a full-stack web application (Next.js, and Supabase) solving emerging digital nomadism challenges in Penang with LLM-based multimodal retrieval-augmented generation answer engine via knowledge base module integrated directly with Supabase Database and Storage for PDF file hosting.
- Engineered large language model (OpenAI, Anthropic, Gemini, Ollama) functionalities unified with the backend via Vercel AI SDK for analytics chatbot module using agentic tool calling for improvements to output quality using guardrails and advanced prompt engineering flows with Zod validation schemas.
- Implemented rich client-side map-based features using Mapbox GL JS APIs (Maps and Geocoding) and React Query for improved UI/UX with performant asynchronous state management.

### COVID-19 Data Insights Dashboard | Next.js, Supabase, Recharts, Shadcn, Python, FastAPI, Big Data + ML

Big Data Programming Project (Group) - https://5011cem.vercel.app/home

APR2024 - AUG2024

- Deployed rich interactive visualizations of processed KKMNOW time series data and ML model predictions.
- Transformed raw machine learning model outputs (ARIMA, LSTM, RFR) into Python and FastAPI-based endpoints consumed by a Next.js frontend in a backend-for-frontend architecture.
- Led the transformation of an ETL data pipeline based on Apache Airflow and unprocessed CSV data into a full-fledged remote Supabase instance based on communicated technical requirements.

## Technical Skills

- Programming Languages:** TypeScript/JavaScript, Python, Java, C++
- Frontend Technologies:** Next.js, React, TailwindCSS, MapboxGL, React Query, Vite, Redux, Recharts, HTML, CSS, JS
- Backend Technologies:** SQL, MySQL, PostgreSQL, MongoDB, Supabase, FastAPI, ORMs (Prisma, Drizzle), Node.js
- Cloud & Deployment:** Vercel, Supabase, AWS (S3, Lambda), Docker
- AI Infrastructure:** Vercel AI SDK, LLM SDKs (OpenAI, Anthropic, Gemini, Ollama), Vector Databases (pgvector)
- Software Engineering:** Agile, Git, Trello, Jira, SSDLC, Azure DevOps

## Extracurriculars & Additional Info

### IBM Bootcamp Winner - Generative AI Pathway

SEP2024

- Pitched and communicated solutions on the feasibility of emergent Generative AI in the Malaysian public health sector, receiving insightful criticism and tutelage for growth from leading IBM authorities in Big Tech and AI Engineering.