

Sian Siong (Edmond) Ng

Backend Developer · System Architect

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ABOUT

Backend engineer and system architect specialising in distributed systems — designing for performance, scalability, and real-time reliability. Strong focus on event-driven architecture, high-frequency / high-volume workloads, idempotent processing, and resilient infrastructure for trading, e-commerce, and marketplace platforms. Comfortable owning delivery end-to-end, from client requirements to architecture, shipping, and team leadership.

EXPERIENCE

Senior Backend Developer

Nov 2025 – Present · Kuala Lumpur, Malaysia

SNSoft Sdn Bhd · Full-time · On-site

Senior Backend Developer on a client-facing customer-engagement platform for e-commerce (multi-channel campaigns, rewards, budgeting). Owns end-to-end delivery — from gathering client requirements to architecting and shipping distributed backend services within a 50–200 person org.

- Designed an **epoch-gate + compare-and-swap (CAS) idempotent dispatch** that eliminated message-reordering and multi-pod race failures, guaranteeing **exactly-once reward delivery** across 6 pods processing up to **300K recipients per campaign** (~1.5M dispatches at peak across 5 concurrent campaigns).
- Built a **4-pass reconciliation orchestrator** using a mark-first CAS pattern, so campaigns interrupted by mid-dispatch pod death self-heal without duplicate or lost sends.
- Led an **Apache Pulsar** → **Temporal migration** of the delivery engine into a hybrid model (Temporal for orchestration, Pulsar consumers for high-throughput fan-out) with **zero downtime**.
- Designed a concurrent **Redis budget-pool deduction system** (atomic INCRBYFLOAT + single-flight lock + TTL guards) preventing over-spend at delivery-scale volume (up to 1.5M deductions), with timezone-correct (UTC+8) daily accounting.
- Hardened a multi-pod scheduler against duplicate execution via single-flight locks, claim-based CAS, and unique-index safeguards.
- Established an **L0–L3 layered architecture standard** enforced by automated dependency-cruiser checks, removing cross-domain coupling and circular dependencies.

Leadership: Translates client requirements into technical specs and scalable designs; drives sprint planning across cross-functional teams; sets code-review and testing standards; mentors engineers on architecture.

NestJS · MongoDB · Temporal · Pulsar · gRPC · Jest · System Architecture

Backend Developer, System Architect & Team Lead

May 2021 – Oct 2025 · 4 yrs 6 mos

MyITS.co · Full-time · On-site, Malaysia

- Designed and implemented scalable backend services for high-frequency trading bots handling thousands of concurrent executions.
- Architected and deployed microservices using **Node.js, Redis, BullMQ, and MongoDB**, achieving low-latency trade execution and dynamic bot assignment.
- Built trading risk-monitoring frameworks covering anomaly detection, fund movements, and high-frequency behaviour analysis.
- Optimised **WebSocket-based real-time market data ingestion** with Redis Pub/Sub and message deduplication strategies.
- Integrated **Prometheus and Grafana** for system-wide monitoring and alerting, ensuring SLA compliance and fast incident response.
- Established cloud infrastructure security practices, including firewall configurations, access-control policies, and centralised logging.

System Architect · Project Management · Node.js · Redis · BullMQ · MongoDB

Full Stack Developer

Jul 2019 – May 2021 · 1 yr 11 mos

CCAR (Coordinating Committee For Automotive Repair) · Full-time · On-site, Malaysia

- Led development of an automotive e-commerce platform (similar to Carlist.my), enabling car dealerships and private sellers to list and promote vehicles online.
- Built end-to-end features: vehicle listings, advanced search filters, user authentication, payment integrations, and admin dashboards.
- Designed scalable RESTful APIs and database architectures to support high-volume user interactions and data management.
- Optimised database queries, implemented server-side caching, and improved frontend rendering efficiency.
- Applied security best practices: input validation, user access control, and regular system updates.

Business Analysis · Full-Stack Development

EDUCATION

Universiti Tunku Abdul Rahman (UTAR)

May 2018 – May 2021

Bachelor of Information Systems Engineering — Information Technology

PROJECTS

MyITS.co — Automated Trading Engine & Infrastructure

May 2021 – Present

- Engineered core backend for MyITS.co's automated crypto trading platform — thousands of robots executing high-frequency strategies across multiple exchanges.
- Built spot & futures trading engines; created an internal indicator framework and backtesting engine; integrated with Binance, OKX, Bitget via a unified Exchange Gateway Service.
- Implemented risk controls: order deduplication, rate limiting, strategy throttling, and fund anomaly detection. Designed capital-allocation and robot-level fund-tracking layer.

MyITS.co — Customer Portal for Crypto Trading Management

May 2021 – Present

- Built a full-featured trading-bot management portal (activate, pause, monitor); asset dashboard for balances, exchange accounts, and transaction history.
- Designed campaign/program-tracking tools; implemented a referral system with personalised links, referral-tree tracking, and bonus calculation.
- Delivered consistent UI/UX using **Next.js** (web) and **React Native** (mobile) with Tailwind CSS and Ant Design.

CCAR.my — Integrated Automotive Marketplace & Community Platform

Jul 2019 – May 2021

- Comprehensive online platform covering vehicle browsing, purchasing, enthusiast community, immersive visualisations, news, and driver-education resources.

SKILLS

Architecture & Systems

System Architecture · Distributed Systems · Microservices · Event-Driven Architecture · Idempotent / Exactly-Once Processing · High-Frequency / High-Volume Systems

Data & Messaging

MongoDB · Redis · BullMQ · Apache Pulsar · Temporal · WebSocket / Redis Pub/Sub

Infra, Testing & Ops

Prometheus · Grafana · Jest · dependency-cruiser · Cloud Infrastructure Security

Backend & Languages

NestJS · Node.js · Express.js · gRPC · RESTful APIs · TypeScript / JavaScript

Frontend & Mobile

Next.js · React Native · Tailwind CSS · Ant Design

Professional

Project Management · Business Analysis · Team Leadership · Full-Stack Development