

MANIMARAN MAHESAN

Senior Full Stack Developer

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SUMMARY

Full stack developer with 4 years of experience building and running production systems across web, desktop, and mobile. Backend-leaning: Java Spring Boot, C#/.NET, and Python/FastAPI services backed by PostgreSQL, MySQL, and MSSQL, with React, Angular, and TypeScript on the front end. Day-to-day ownership of production environments including RHEL servers, Docker deployments, CI/CD pipelines, and root-cause analysis on live defects. Has designed and delivered complete systems independently, including a licensed commercial POS platform and an LLM-integrated research application with enforced tool and database boundaries.

TECHNICAL SKILLS

Core: Java, Spring Boot, C#, ASP.NET / .NET Core, Python, FastAPI, TypeScript, JavaScript, React, Angular, Node.js, REST APIs, PostgreSQL, MySQL, MSSQL, Redis, Docker, Linux (RHEL), Git, CI/CD

Experienced: Next.js, React Native, Electron, WebSockets, Microservices, JWT / RBAC, Prisma, Flyway, Firebase / Firestore, Nginx, MinIO / S3, Shell scripting, GitLab CI, GitHub Actions, AWS (EC2, S3, Lambda, RDS), Redux Toolkit, Zustand, Tailwind CSS, Vite

Working knowledge: Kotlin, Dart, Flutter, PHP, Laravel, Vue, Nuxt, NestJS, Django, Flask, GraphQL, MongoDB, Kubernetes, Azure, Jenkins, Caddy, WPF, Python Tkinter

AI / LLM engineering: Built LLM features into production-style systems: allowlisted read-only tool calling, provider routing and failover across Anthropic, OpenAI, Gemini, Groq and local Ollama, RAG retrieval, and database-level permission boundaries. Uses Claude Code and Copilot in daily development.

PROFESSIONAL EXPERIENCE

Senior Full Stack Developer

May 2025 – Present

Infomina Berhad | Contract

- Own delivery of full-stack features across web, Windows desktop, and mobile platforms, from design through production deployment and ongoing support.
- Design and build backend services and REST APIs in Java Spring Boot, Node.js, and FastAPI, selecting the appropriate stack per service, with Angular and TypeScript on the front end.
- Introduced Redis caching over MySQL to reduce database load on read-heavy endpoints and improve response times.
- Maintain RHEL production servers: containerize applications with Docker, automate operational tasks in Shell, and act as escalation point for live defects across both application and infrastructure layers.
- Diagnose production incidents through log analysis and root-cause investigation, then ship fixes and preventive changes rather than surface patches.
- Built desktop and automation tooling with Electron and Python Tkinter, integrating OCR and automated number plate recognition to replace manual data entry in operational workflows.
- Use AI-assisted development (Claude Code, Copilot) for prototyping, refactoring, and test scaffolding, with review and testing before anything reaches production.

Software Engineer

March 2023 – May 2025

Consolsys Sdn. Bhd. | Permanent

- Maintained and extended backend services and web applications in C#, ASP.NET, JavaScript, and Angular, taking features from requirement through release.
- Investigated complex production defects through code-level debugging and root-cause analysis, resolving issues that had resisted earlier fixes and improving overall system stability.
- Optimized MSSQL queries and batch-processing workflows, improving data throughput on long-running jobs.
- Managed build and release through Visual Studio, GitLab, and CI/CD pipelines, and supported deployments and post-release issues in production.

Application Developer

September 2022 – February 2023

Protech Digital | Full-time

- Developed application features and backend components, implementing data-driven functionality and tuning SQL queries against relational databases.
- Debugged and resolved reported defects, working alongside senior developers to deliver fixes on schedule.

MANIMARAN MAHESAN

Selected Projects | github.com/manimaran98

SELECTED PROJECTS

AI Trader — Market Research & Trading Simulation Platform *Private repository — available on request*

Stack: FastAPI, Python, PostgreSQL/TimescaleDB, Redis, MinIO, Docker, React, TypeScript, WebSockets, Ollama, Anthropic / OpenAI / Gemini

- A self-hosted workspace for researching market data, practising trade execution against historical data, and keeping a trade journal, built as a multi-service system rather than a chat wrapper.
- Designed the service architecture: a FastAPI backend over TimescaleDB, Redis for caching and quota coordination, and MinIO for private file storage, orchestrated with Docker Compose. Six external data providers sit behind a quota gateway using per-pool token buckets, circuit breaking, and request auditing.
- Solved the look-ahead problem in the replay engine by clamping every candle query to a session cursor, so simulated trades can never see future data. Order fills, margin, partial closes, and liquidation are enforced as tested ledger invariants.
- Constrained the LLM assistant to an allowlisted read-only tool registry and a dedicated SELECT-only PostgreSQL role, so the data boundary holds at the database layer even if application logic is wrong. Routes requests across local and cloud providers with failover.

Enterprise POS System — POS System & ERP Software *Private repository — available on request*

Stack: Electron, React, TypeScript, Redux Toolkit, Java, Spring Boot, PostgreSQL, Flyway, Docker, Nginx, Python, JWT

- A commercially licensed point-of-sale product for retail tills: cashier terminal, dual-screen customer display, inventory with expiry tracking, shift and cash-drawer management, and reporting.
- Built the three-tier architecture end to end: an Electron/React desktop client, a Spring Boot REST and WebSocket backend, and a PostgreSQL database with Flyway-managed migrations.
- Moved thermal receipt and barcode printing into a separate Python ESC/POS HTTP service running as a Windows service, removing native printer driver dependencies from the Electron client and isolating hardware failures for debugging.
- Implemented the licensing system that makes the product commercially sellable: AES-256-GCM with PBKDF2 derivation and HMAC-SHA256 integrity, bound to a hardware fingerprint, enforcing user, device, terminal, and feature limits across perpetual, trial, and subscription keys.
- Secured and deployed the platform with JWT authentication, an annotation-driven access matrix enforced through AOP, rate limiting, and encrypted configuration; shipped via Docker Compose behind Nginx with SSL termination, scheduled backups, and audit log export.

Papercup — Multi-Store Cloud POS Platform *Private repository — available on request*

Stack: React Native, React, TypeScript, Firebase (Auth, Firestore, Cloud Functions), Node.js, Zod, npm workspaces

- A cloud point-of-sale system for a cafe business: a React Native app on store devices for sales and shifts, plus a web dashboard for managing stores, staff, inventory, and reporting.
- Kept money-handling logic off the client entirely. Checkout, sale voiding, shift lifecycle, inventory adjustment, and voucher redemption run as transactional Cloud Functions that re-validate prices and stock server-side and decrement inventory atomically.
- Made offline sales safe by persisting queued checkouts with idempotency keys to a command ledger, so a replayed transaction after reconnection cannot create a duplicate sale, the core correctness problem in offline-first retail.
- Enforced role-based access through Firebase custom claims, Firestore security rules, and store-scoped authorization profiles, with employee PINs verified server-side against stored hashes. Shared business rules live in a common TypeScript package across mobile, web, and backend.

DofE Malaysia — Programme Registration Platform *Private repository — available on request*

Stack: Next.js, React, TypeScript, Prisma, PostgreSQL, Zod, bcrypt, JWT, MinIO / S3, Docker, Caddy

- The public website and registration system for a national youth award programme, handling individual and school-cohort enrolment plus an admin dashboard for reviewing registrations and managing site content.
- Built bulk registration so teachers can enrol whole cohorts by manual entry or CSV upload, generating tracked batches with unique reference numbers, validation feedback, notification emails, and CSV export.
- Implemented a review state machine (submitted, under review, needs correction, approved, rejected, cancelled) with organisation-scoped access, so partner organisations see only their own registrants.
- Handled participant data with bcrypt hashing, signed httpOnly JWT sessions, Zod validation, per-IP rate limiting, and parameterized queries; uploads are proxied through authenticated routes rather than exposing the storage bucket.

HalenMiaga — E-Commerce Platform github.com/manimaran98/Bag-Ecommerce

Stack: Laravel, PHP, MySQL, Phinx, Docker, Nginx, Stripe API, Gemini / Groq

- An online bag retailer with storefront, cart, Stripe checkout, invoicing, and an admin area for stock, suppliers, deliveries, and sales reporting.
- Added a storefront assistant backed by LLM providers with failover between Gemini and Groq, rate limiting, CAPTCHA verification, and escalation into an admin help-desk queue when the model cannot resolve a query.

EDUCATION & CERTIFICATIONS

Bachelor of Computer Science (Hons) — First Class Honours

Universiti Selangor | 2019 – 2022 AWS Certified Cloud Practitioner • AWS re/Start Program