

Kareem Mohamed

Backend Developer

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SUMMARY

Backend Engineer specializing in PHP and Laravel. Focused on clean system design, reliable architecture, and building scalable SaaS applications

PROFESSIONAL EXPERIENCE

Cyrus Technology *📍, Software Engineer* 03/2024 – Present | Cairo, Egypt

Contributed to the development of large-scale B2B enterprise solutions, including CRM, ERP, and Retail Management Systems (RMS), serving external clients and ensuring system stability and scalability.

My Role: Acted as a core developer across both backend and frontend layers. Responsible for designing system modules, resolving complex technical issues, and ensuring smooth data presentation. Leveraged business analysis and accounting knowledge to effectively translate client needs into scalable technical requirements with a product-first mindset.

Key Contributions:

- **Fawry Integration:** Independently managed the end-to-end integration of the Fawry SDK into a gas station POS system, securely handling external financial transactions.
- **Offline RMS Engine:** Engineered and developed an offline-capable version of the retail management system from scratch (backend and frontend) to guarantee uninterrupted business operations.
- **Legacy to SaaS Refactoring:** Played a key role in refactoring the company's flagship e-invoicing product (ETA integration) into a modern SaaS platform to clean architecture, significantly improving maintainability and user experience.
- **Engineering Documentation:** Established a unified technical documentation framework for the engineering team. Educated the team on documenting cross-module interactions, Logging, subscriptions, AuthN, and AuthZ to prevent knowledge gaps.
- **Testing Advocacy:** Championed the introduction of automated testing practices within the team to enhance the reliability and quality of the company's SaaS offerings.

United Media Services (via Clicks Egypt), *Back End Developer* 02/2022 – 01/2024 | Cairo, Egypt

Engineered mission-critical, national platforms for UMS, heavily scrutinized by Egyptian ministries.

My Role: Sole backend developer. Architected high-traffic systems and optimized massive databases, ensuring strict governmental compliance and 100% data accuracy in a high-pressure environment.

Key Contributions:

- **High-Traffic National Competition (Dawlet El Telawa):** Engineered the backend for a major competition, scrutinized by the Ministry of Endowments, handling over 500,000 active users within its first week. Implemented robust security layers (request signatures, rate-limiting, CAPTCHA) to handle massive concurrent voting and prevent fraud.
- **National Event Management (Al-Alamein Festival):** Architected and developed the core backend for the festival's management system in collaboration with governmental entities. Successfully powered operations for two consecutive years under intense operational load and strict deadlines.
- **Live Assessment System (ON Sport):** Built a complex real-time evaluation platform for sports commentators, handling synchronized live video streaming and concurrent audio commentary submissions for committee review.
- **Media & Educational Ecosystems:** Delivered the backend infrastructure for several other key platforms ensuring pixel-perfect accuracy and high availability, including the UMS Podcast portal, UMA e-learning platform, and a script-evaluation portal for WatchIt.

PROJECTS

Real Estate CRM SaaS — DealSpace (US) | Freelance Backend Engineer

01/2025 – 03/2026

Case Study Context & Business Design: Acted as the sole system architect and backend engineer for a US-based real estate SaaS. Spearheaded a 1-month comprehensive market and competitor analysis to map out the end-to-end system flow, translating complex real estate workflows into a scalable technical roadmap before writing any code.

Technical Architecture: Architected a **Modular Monolith (Clean Architecture)** tailored for high-performance multi-tenancy, leveraging **Laravel Octane (FrankenPHP)**, Redis, Horizon, and Reverb to handle real-time events and background processing efficiently.

Key Engineering Contributions:

- **Future-Proof Modular Design:** Enforced strict separation of business logic by isolating domains (Auth, Subscriptions, Payments, Leads, Deals, Tasks). Implemented interface-driven communication between modules to ensure loose coupling, allowing for a seamless transition to Microservices in the future.
- **Concurrency & Performance Optimization:** Addressed race conditions and concurrency challenges inherent in persistent PHP execution (FrankenPHP). Optimized database loads by designing a stateless AuthN system, utilizing a hybrid real-time database validation fallback only for highly sensitive operations.
- **Database & Multi-Tenancy Efficiency:** Engineered a highly optimized database schema with strategic indexing, ensuring strict data isolation (preventing cross-tenant data leaks) and lightning-fast query execution across millions of records.
- **Third-Party Integrations:** Seamlessly integrated Google Maps API, Google Calendar API, and automated email workflows, utilizing Microsoft Azure and Google Cloud for scalable infrastructure.

E-Scooter Mobility Platform — Fentec Mobility (Algeria) | Freelance Backend Engineer

01/2022 – 08/2023

The Story:

When building this mobility platform for the Algerian market, we hit two major roadblocks: the local market relied heavily on cash, making standard digital payments unviable, and our initial hardware vendor restricted our remote control. To save the investor's vision, I co-led a massive pivot. I sourced a new IoT vendor from China, overcoming language barriers to fully integrate their SDK. To solve the payment crisis, we engineered a custom offline-to-online digital wallet ecosystem. We built a "Seller App" for local kiosks to sell ride points for cash, and an "Accountant App" for monthly settlements. What started as a standard backend task evolved into architecting a complete business survival strategy.

Technical Execution:

- **High-Frequency IoT & Performance:** Built a high-concurrency backend powered by **Laravel Octane (Swoole)**. Shielded the main database from crashing under continuous, per-second IoT data streams by routing all real-time pings through **Redis**.
- **Vector-Based Geofencing:** Researched and implemented custom vector-based algorithms to build a highly accurate geofencing engine, automatically tracking scooters and preventing entry into restricted zones.
- **Real-Time Financial Engine:** Architected a live balance-tracking system that synchronized directly with the live trip monitors, automatically terminating rides the exact moment a user's wallet depleted.
- **Full-Scale Management Ecosystem:** Delivered a comprehensive suite including identity verification (KYC), rating systems, and a Super-Admin dashboard with live Google Maps integration for complete fleet oversight.

Other Notable Projects

- **Amazon & Costco Price Monitor:** Built a Laravel Octane/Reverb inventory tracker with real-time WebSocket alerts for drop-shipping, ensuring eBay compliance.
- **InstaSports Ticketing:** Developed a scalable, UMS-backed Laravel backend featuring complex venue hierarchies, strict RBAC, and full audit logging.

SKILLS

(Advanced PHP, Laravel Ecosystem (Octane, FrankenPHP, Reverb, Queues), OOP & SOLID Principles, Clean Architecture, Multi-Tenant SaaS Design, High Concurrency Handling, API Optimization, Stateless Authentication, MySQL, Redis, RabbitMQ, WebSockets, Docker, Third-Party SDK Integrations.)

EDUCATION

Higher Institute of Languages Sheraton | Cairo, Very Good 76% 09/2021 – 06/2025 | Cairo (sheraton), Egypt