Tarrek Osama Mohamed

Software Engineer

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SUMMARY

Backend Software Engineer with a strong Engineering background, specializing in building scalable SaaS architectures and high-concurrency financial systems. Expert across the **Laravel (PHP 8+)** and **Node.js/NestJS (TypeScript)** ecosystems, with deep experience in microservices, DevOps (Ubuntu, Nginx, Docker, Supervisor), and asynchronous processing (Queues & Redis). Comfortable owning full-stack delivery when needed (Angular, React, Vue, Livewire). Currently expanding into **AI Engineering** — integrating LLMs, RAG, Agentic AI, and Vector Databases into production backend systems — and uses an AI-assisted workflow (Claude Code, Cursor, Copilot) to accelerate delivery without sacrificing code quality. Has architected and delivered 15+ scalable projects across FinTech, SaaS ERP, logistics, and AI automation domains, with a consistent focus on data integrity, security, and performance optimization. All systems listed below are live production platforms, engineered to handle real-world, high-concurrency workloads.

WORK EXPERIENCE

Software Engineer — AcuteBusiness (Saudi Arabia – Remote) **Jun 2024 – Present**

Dawamk — Multi-Tenant SaaS ERP (38+ Modules)

- Maintained and extended a modular monolith architecture with 38+ independently purchasable modules spanning HR (HRM, Recurring Invoice, Petty Cash), Finance (Double-Entry Accounting, E-Invoice, ZATCA e-invoicing compliance), CRM/Sales (Lead, Sales, Quotation, Retainer), Operations (Procurement, Inventory, Assets, Contracts, Property Management), Project Management (Taskly), POS, and a Social Media Management suite (YouTube, Instagram, Facebook content & analytics) — each module independently licensable within a company's subscription plan.
- Designed and implemented a Role-Based Access Control (RBAC) system, mapping granular permissions to roles for fine-grained access control across all modules.
- Engineered a dynamic subscription engine supporting both pre-built module packages and fully custom packages, with configurable module selection and subscription duration.
- Built an event-driven backend (Jobs, Queues, Supervisor) powering real-time push notifications (Firebase) across 7 mobile apps — HRM, CRM, Support Ticket, Sales, Project Management, a unified "Super App," and a geofenced Attendance app.
- Built the geofenced Attendance system, requiring employees to be physically within a defined work location to check in; work-location boundaries are managed via a web dashboard using Leaflet (open-source mapping).
- Engineered the HRM module with a strong focus on system design quality — DRY, SOLID principles, database transactions, and design patterns (Repository, Factory, Observer).
- Designed, built, and open-sourced (GitHub) a set of Composer payment gateway integration packages — Stripe, PayPal, PayTabs, DigiPay, EdfaPay, and Al Inma Bank Pay — used for invoice and subscription billing between client companies and the super-admin.
- Architected the payment layer with webhooks, retry mechanisms, idempotency keys, race-condition handling, and a refund system.
- Added an AI Assistant module and a Twilio-based communication integration.
- Built Single Sign-On (SSO) between the mobile and web applications.
- **Stack:** Laravel 11, Blade, jQuery, Tailwind CSS, MySQL

store.bashqash — Vendor Marketplace (Bashqash E-Wallet Ecosystem)

- Built a vendor marketplace e-commerce platform as an extension of the Bashqash e-wallet, covering vendor management, product catalog, cart, and checkout — fully integrated with the wallet for payments.
- Implemented Single Sign-On (SSO) between the store and the wallet platform, with all backend-to-wallet communication secured via HMAC signature authentication.
- Integrated with the wallet's end-user app, POS system, and the wallet's own backend and web frontend.
- Designed and built a real-time gold trading feature for vendors: live gold pricing, buy/sell operations, and a full delivery/pickup fulfillment flow with logistics tracking via Leaflet.
- **Stack:** Laravel 8, Blade, MySQL

Working context: Agile/Scrum sprints, direct collaboration with Tech Lead, Product Manager, and QA.

Backend Developer — 99BrightMinds (Remote, Part-time, Saudi Client) **Jun 2026 – Present**

- Worked with 99BrightMinds on a live production platform for a Saudi client ("Onet") handling heavy-goods delivery — furniture, appliances, and large items — connecting individuals, e-commerce stores, and businesses with a network of vehicle-owning drivers across Saudi Arabia.
- Refactored legacy, long-running production code as part of an ongoing modernization effort while shipping new features in parallel, in Agile sprints.
- Implemented order pricing and lifecycle logic covering two distinct request types — customer bidding requests vs. fixed-price store-assigned requests — each with its own state machine spanning creation, driver assignment, pickup, delivery, and completion.
- Integrated Google Maps for location and routing.
- Built background job/queue processing for order lifecycle events at production scale.
- **Stack:** Vue 3, Laravel 7, MySQL, Queues, Laravel Forge, Google Maps, AWS S3, AWS RDS

Backend Developer & DevOps Engineer — FOVIXA (Saudi Arabia – Remote, Part-time) **Jan 2026 – Present**

- Backend & DevOps engineer on FOVIXA, a deterministic financial reconciliation ("Financial Observability & Truth Layer") SaaS platform: it ingests multi-source financial data — bank statements, invoices, payments, inventory movements, journal entries — and builds a fully auditable, exception-driven ledger of financial truth, with every number traceable back to its source document and decision.
- Built backend logic enforcing the platform's core integrity principles: immutable raw-data ingestion, idempotent/atomic batch processing, duplicate and conflict detection via data fingerprinting, and an exception-based reconciliation engine that flags unclassified transactions, missing invoices, unallocated payments, and inventory coverage gaps instead of silently closing the books.
- Implemented a governed alias/rule-learning system that maps recurring bank accounts, IBANs, and payment patterns to vendors or customers over time — fully versioned, with every change producing an audit trail rather than overwriting history.
- Owned full DevOps: Dockerized deployments across 3 environments (dev/staging/production), CI/CD pipelines, queue management via Laravel Horizon, and observability via Grafana and Laravel Telescope.
- Applied SOLID principles and clean design patterns throughout a backend built around auditability and governed data integrity.
- **Stack:** Laravel 11, PostgreSQL, Docker, Horizon, Grafana, Telescope

Independent Software Engineer — Technical Owner (Freelance) **Jul 2022 – Present**

Lead2Done (SaaS CRM & ERP Modules)

Live in production, profitable, and still under my ownership — maintenance, infrastructure, and new feature requests.

- Architected and deployed a multi-tenant CRM/ERP solo, using **NestJS (TypeScript)** with custom middleware for dynamic tenant resolution via Nginx Wildcard Subdomains.
- Implemented modular RBAC with Guards/Interceptors.
- Integrated secure payment webhooks (Paddle) for recurring subscriptions.

Rental Management Ecosystem (Private Enterprise System)

Live in production, profitable, and still under my ownership — maintenance, infrastructure, and new feature requests.

- Architected decoupled infrastructure integrating Laravel (core) with **Node.js microservices** (WhatsApp integration).
- Engineered high-performance async processing using Horizon, Redis, and Supervisor for heavy financial aggregation jobs.
- Developed a multi-channel notification engine (DB, Email, WhatsApp).

ColdBot (AI Call Automation)

Live in production, profitable, and still under my ownership — maintenance, infrastructure, and new feature requests.

- Architected a full-stack platform (Laravel API & Angular) supporting AI capabilities.
- Built a real-time transcription dashboard via WebSockets from Bland.ai.
- Built a comprehensive auth system integrated with dual payment gateways.

E-commerce / OpenCart

- Architected and maintained scalable multi-vendor e-commerce platforms.
- Developed custom OpenCart modules and optimized complex PHP/MySQL queries for high-traffic environments.
- Engineered secure RESTful API integrations for third-party payment gateways and shipping providers.

Full-Stack Developer & DevOps — Aithon (Remote, Part-time) **Jan 2025 – Jun 2025**

- Worked across multiple educational platforms — e-learning systems, digital study books, and online book-selling platforms.
- Owned full DevOps responsibility for the company's VPS infrastructure: server setup, security hardening, environment configuration, and deployment pipelines across all projects.
- Built a realistic interactive book-reader in React with a page-flip animation that mimics flipping a physical book page by page.
- Implemented dual-currency support in the dashboard, automatically pricing in EGP or foreign currency based on the user's detected origin (Egyptian vs. international).
- Integrated PayMob for payment processing.
- Built background processing with Queues, Cron Jobs, and Supervisor for scheduled and async tasks.
- Applied clean architecture practices — SOLID principles and design patterns (Repository, Factory, Observer) — for maintainable, testable code.
- **Stack:** React, Laravel 11, MySQL

TECHNICAL SKILLS

Backend	**PHP 8+, Laravel, Node.js, NestJS, TypeScript, Express.js**, Open-Source Composer Package Authoring
Frontend	Angular, React.js, Vue 3, Livewire, Blade, jQuery, RxJS, Redux, Tailwind CSS, Bootstrap
AI Engineering	**LLMs Integration, RAG, Agentic AI, Vector Databases, MCP**, AI-Assisted Development (Claude Code, Cursor, Copilot, Gemini)
Databases & ORMs	**MySQL** (Schema Design, Optimization, Spatial/GIS), **PostgreSQL, MongoDB, Redis, Prisma, TypeORM**
Architecture & Security	Multi-Tenant Architecture, Modular Monolith, Microservices, Event-Driven Architecture, REST APIs, Single Sign-On (SSO), HMAC Signature Auth, JWT, RBAC/PBAC, Guards/Interceptors, Idempotency & Webhook Systems, State Machines, WebSockets, Clean Architecture, SOLID Principles, Design Patterns
Integrations & Gateways	Stripe, PayPal, PayTabs, EdfaPay, DigiPay, Al Inma Bank Pay, PayMob, Paddle, ZATCA (E-Invoicing), Firebase (FCM), Twilio, Bland.ai, Google Maps API, Leaflet (GIS)
DevOps & Observability	**Linux (Ubuntu VPS), Nginx** (Wildcard Subdomains), **Docker, Supervisor, Laravel Horizon, CI/CD**, Laravel Forge, GitHub Actions, **AWS (S3, RDS)**, Grafana, Laravel Telescope, SSH
Tools & Testing	Git/GitHub, Postman, Swagger, Jira, PHPUnit
Domains	Multi-Tenant SaaS ERP & CRM, FinTech (Financial Reconciliation, Double-Entry Accounting, ZATCA E-Invoicing, Digital Wallets, Gold Trading), Payment Gateways & Subscription Billing, Fleet & Delivery Logistics, Multi-Vendor Marketplaces & E-commerce, HRTech (Geofenced Attendance), Property & Asset Management, EdTech / E-Learning, AI Call Automation

LANGUAGES

Arabic Native

English Working Proficiency

EDUCATION

Nov 2024 – Apr 2025 **Intensive Code Camp (Full Stack PHP Track)** **ITI**

Sep 2017 – Jul 2022 **Bachelor's Degree in Engineering** **Port Said University**