

Tawfiq Sultan Alqaidy

Software Engineer

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Professional Summary

High-performing Software Engineer with a proven track record of designing and orchestrating high-throughput Distributed Systems and decoupling advanced AI-driven Microservices. Specialized in building secure, horizontally scalable architectures using FastAPI and Laravel, with deep expertise in centralized API Gateway implementations, event-driven messaging pipelines, and RAG optimization. Skilled technical leader adept at guiding engineering teams through production-grade digital transformations and zero-knowledge security implementations[cite: 1].

Core Technical Skills

- **Architecture & Orchestration:** Microservices Architecture, API Gateway Design, Event-Driven Systems (RabbitMQ), Service Discovery, Distributed Systems[cite: 1].
- **AI Engineering & Advanced RAG:** Production-Grade RAG Pipelines, Decoupled AI Microservices, Vector Storage & Indexing (Redis/RediSearch/RedisJSON/pgvector), Reciprocal Rank Fusion (RRF), Context Ingestion, Agentic Tool-Calling Systems[cite: 1].
- **Backend Engineering:** Python (FastAPI), PHP 8.3+ (Laravel), Node.js (Express), MySQL, PostgreSQL, MongoDB, Supabase[cite: 1].
- **Security & Authentication:** Zero-Knowledge Architecture, JWT-based Auth, OAuth2, Role-Based Access Control (RBAC), SSL/TLS Session Management[cite: 1].
- **DevOps & Infrastructure:** Linux System Administration, Nginx (Reverse Proxy & Load Balancing), PM2 Process Management, Docker, Automated Cloud Backup Workflows[cite: 1].

Work Experience

Lead Backend Engineer | Vanex (Logistics & Shipping)

Tripoli, Libya | September 2025 – Present[cite: 1]

- **Microservices Orchestration:** Architected, developed, and deployed centralized API Gateways to route, secure, and manage high-traffic communication across distributed logistics services[cite: 1].

- **Infrastructure Evolution:** Commanded the backend engineering team in strategically decomposing complex legacy monolithic components into event-driven microservices using RabbitMQ for reliable asynchronous task execution[cite: 1].
- **System Reliability & Auditability:** Engineered a high-throughput, non-blocking Audit Log Service integrated with MongoDB, processing real-time platform event-logging to ensure full system compliance[cite: 1].
- **Technical Governance & DevOps:** Established elite coding standards, directed architectural design reviews, and orchestrated production-grade deployment lifecycles using Nginx and PM2 to guarantee 99.9% application uptime[cite: 1].

Key Technical Projects

LogPilot AI | Open-Source SaaS Ecosystem & Developer Tool

- **Asynchronous Ingestion Pipeline:** Architected a highly decoupled ingestion service using FastAPI and RabbitMQ to process incoming error logs with zero latency and high throughput, ensuring host applications remain entirely non-blocked.
- **Native Open-Source SDKs:** Developed and published zero-dependency, production-ready SDKs for Node.js (available on npm)[cite: 1] and Laravel. Implemented a strict 'fire-and-forget' pattern utilizing a custom `asyncHandler` wrapper to automatically capture unhandled Promise rejections and synchronous exceptions.
- **AI-Powered Root Cause Analysis (RAG):** Built an intelligent background worker that consumes error messages from RabbitMQ queues, queries a PostgreSQL Vector Database (`pgvector`) for similar historical errors, and injects context into LLMs to generate precise, Markdown-formatted resolutions and IDE-ready prompts.
- **Active Alerting & SaaS Dashboard:** Engineered an automated background alerting service using SMTP/Gmail API for instant critical-crash notifications. Designed a secure, responsive dashboard using React and Tailwind CSS to visualize real-time error pipelines and manage workspace configurations.

DataPilot | Standalone AI-Powered SQL Editor & Database Desktop App[cite: 1]

- **Decoupled AI Microservice:** Designed and developed an independent, low-latency AI service utilizing FastAPI that serves as the backend intelligence engine for a cross-platform Electron application[cite: 1].
- **Secure API Interface:** Implemented a highly secure, state-of-the-art HTTP interface protected by strict JWT authentication to handle communications between the local desktop interface and cloud-cached services[cite: 1].
- **Advanced RAG Pipeline:** Developed a high-performance database schema context injection system combining Vector Similarity Search and Keyword Full-Text Search, merged seamlessly via Reciprocal Rank Fusion (RRF)[cite: 1].
- **Privacy-First Design:** Formulated and enforced a strict Zero-Knowledge architecture ensuring sensitive user database credentials remain entirely local, syncing only abstracted database connection metadata[cite: 1].

Enterprise Logistics & Administrative System[cite: 1]

- **Robust Core Architecture:** Designed and implemented a robust multi-role administrative platform managing enterprise-level data structures with complex, rigorous state-machine order lifecycles[cite: 1].
- **Data Disaster Recovery:** Designed and deployed automated, cron-managed production database backup workflows pushing to secure cloud storage, achieving zero-data-loss business continuity[cite: 1].

Education

B.Sc. in Software Engineering

University of Tripoli – Faculty of Information Technology | Graduation: February 2026[cite: 1]

- **Core Academic Focus:** Design Patterns, Object-Oriented System Analysis, Distributed System Design, Database Structures[cite: 1].