

Eskandar (Alex) Seif

Senior Software Architect & Principal Systems Engineer

alex.seif@gmail.com • +201004006332 •
Cairo, Egypt | Remote (EU / GMT+2 Alignment) | Open to Relocation • alexseif.com

PROFESSIONAL SUMMARY

Pragmatic Software Architect with over 20 years of hands-on experience designing, scaling, and maintaining high-stakes, high-concurrency digital infrastructure. Proven track record taking mission-critical systems from zero to production, including national-scale public sector platforms serving millions of concurrent citizens, region-first online payment gateways, and decoupled spatial GIS engines. Deep specialist in the PHP/Symfony ecosystem, relational database optimization (PostgreSQL/MySQL), and high-availability systems architecture. Focuses on pragmatic engineering governance, zero-downtime deployments, and long-term technical debt reduction.

TECHNICAL STACK & ARCHITECTURE COMPETENCIES

Architecture & System Design:	Distributed Systems, Monolith Decoupling, High-Concurrency Routing, Domain-Driven Design (DDD), Fault-Tolerant State Machines, REST & OpenAPI Synchronization.
Languages & Core Frameworks:	PHP 8.x (Symfony, Laravel, Core, Drupal Enterprise, Moodle), TypeScript / JavaScript (Node.js, React 19), Python 3.12 (FastAPI), Bash Automation.
Data Layers & Spatial Indexing:	PostgreSQL 15+ / PostGIS (Spatial Indexing, SRID 4326), MySQL / MariaDB (Master-Slave Replication, Query Optimization, 3NF Normalization, Star Schema).
Cloud, DevOps & Infrastructure:	Docker / Docker Compose, Linux Systems Administration, Nginx Reverse Proxy, AWS (EC2, ELB, S3), CI/CD Automation (GitHub Actions), Air-Gapped Intranet Deployment Automation.
Engineering Governance:	Architecture Decision Records (ADRs), Technical Debt Remediation, Requirements Elicitation, QA/CI Quality Gate Standardization, Mitigating Key-Person Risk.

FEATURED ARCHITECTURAL ENGAGEMENTS (DEEP DIVES)

barincairo.com (2026) — *Software Architect & Lead Full-Stack Engineer*

Architected a decoupled Web GIS platform (React 19 SPA, Python 3.12 FastAPI, PostGIS) featuring sub-second spatial viewport queries, automated multi-tier web scraping pipelines, and Docker containerized deployment.

Greek Community of Alexandria Portal Modernization (2026) — *Lead Systems Architect & Full-Stack Developer*

Programmatically decoupled and modernized a legacy CMS monolith into a lightweight, zero-dependency Full Site Editing architecture via script-first Agentic AI workflows with 1:1 visual fidelity.

North South Consultants Exchange (NSCE) (2025) — *Lead Software Architect & Technical Partner*

Architected an institutional project impact and donor transparency platform used by international development funders (UN, GIZ, EU) to evaluate multi-country programs across the MENA region.

Region-First Payment Gateway (Wallety) (2009) — *Co-Founder & Chief Technology Officer (CTO)*

Architected and deployed Egypt's first independent online payment gateway from scratch. Engineered asynchronous CLI queue daemons and defensive transactional state machines, scaling the platform to process 33% of domestic airline ticketing transactions.

PROFESSIONAL EXPERIENCE

PRINCIPAL SOFTWARE ARCHITECT & TECHNICAL LEAD

iSoft (IdealSoft Emirates) | Retainer Engagement

January 2021 – December 2024

Contracted to deliver ministry-level digital infrastructure, high-concurrency transactional routing engines, and API architectures for federal and municipal public sector clients across Egypt and the GCC region.

- **National Vehicle Inspection Scheduling Infrastructure (SASO - Saudi Arabia):** Architected the nationwide vehicle inspection booking system managing multi-lane facilities. Engineered a distributed transactional lock-state system with a deterministic 5-minute buffer that eliminated race conditions across competing web, mobile, and backend channels for identical 15-minute appointment slots. Remodeled database schemas into 3NF for transactional consistency and Star Schema for real-time reporting.
- **Air-Gapped Intranet Training Portal (Egyptian Ministry of Interior - Traffic Police Dept.):** Architected and deployed a highly locked-down enterprise training portal on a restricted state intranet for mandatory licensing courses nationwide. Engineered a deterministic zero-network deployment pipeline using a custom-patched OS repository and physical media with fault-tolerant automated migration scripts.
- **National Vehicle Inspection Digital Ecosystem (Aman Portal):** Technical Lead for a public-private national initiative web ecosystem offloading vehicle inspections from traditional traffic departments to mobile testing units and commercial hubs via high-availability backend API integration.
- **State-Licensed Cooperative Insurance Platform (Salama Portal - Saudi Arabia):** Engineered the core registration workflows, validation mechanics, and secure transaction-handling layers for compliant digital automotive insurance.

CO-FOUNDER & CHIEF TECHNOLOGY OFFICER (CTO)

MITCHDesigns | Executive Technical Leadership

June 2009 – December 2020

Co-founded and scaled an engineering studio into a premier regional digital technical partner, architecting and delivering over 150 bespoke digital products, ecommerce engines, and SaaS platforms across the MENA region.

- **Engineering Organization Leadership:** Recruited, trained, and mentored an engineering department of 40+ full-stack software engineers, front-end developers, and system administrators, establishing company-wide coding standards and architecture review processes.
 - **Architectural Delivery:** Directed the end-to-end technical execution of complex client systems, high-volume transactional platforms, and third-party integrations across tourism, media, and commerce sectors.
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EDUCATION & FOUNDATIONS

- **B.Sc. in Business Information Systems (BIS)** | Arab Academy for Science, Technology & Maritime Transport (AASTMT)
- **Interactive Engineering Vault & Case Studies:** Complete 20-year multi-project archive and detailed architectural use cases available at alexseif.com/case-studies

Single Source of Truth: Complete 20-year multi-project architectural vault, systems diagrams, and engineering dossiers available at: <https://alexseif.com/case-studies>