AHMED EMIRA

Senior Software Engineer — Backend, DevOps & Construction Technology (BIM)

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Transferable iqama (Computer Programmer) · Saudi Council of Engineers registered · Available immediately · Arabic & English

SUMMARY

Senior software engineer with 12+ years building secure backend systems, business platforms and the servers they run on, with full end-to-end ownership from process analysis and data modelling to server hardening and deployment.

Combined engineering with management roles in maintenance, operations and project-based companies across Saudi Arabia and Egypt. Built management systems adopted across 3 departments of a Saudi government security organization, and a configurable ERP and workflow platform now used to deliver tailored systems for clients.

Now combining that systems background with web 3D (WebGL, Three.js) to deliver complete hosted construction applications: 2D drawings turned into IFC4 BIM models with 4D construction sequencing, live configuration and 5D pricing in the browser.

CORE SKILLS

Backend & APIs: Node.js, Express, PHP (Laravel, CodeIgniter), Python (Flask); RESTful API design, MVC and middleware architecture, background jobs, webhooks, document generation, notification services

Application Security: OWASP Top 10 mitigation; input validation and sanitization; CSRF and XSS protection; parameterized queries; JWT/session authentication; bcrypt hashing; role-based access control; rate limiting; secure headers (CSP, HSTS); audit logging

DevOps & Data: Linux server administration and hardening (firewalls, Fail2ban, SSH keys, least-privilege users), Nginx, Docker, Git and CI/CD, SSL/TLS, backups and monitoring, Plesk/cPanel; AWS, Alibaba Cloud; PostgreSQL, MySQL, MongoDB, Redis; double-entry ledger and audit-trail design

BIM & Construction Technology: IFC4 model generation (IfcOpenShell), 4D construction sequencing, 5D quantity-based pricing and BOQ, DWG-to-3D pipelines; Three.js, GLB/glTF optimization, interactive configurators, browser-based model viewers and inspectors

Workflow & Business Systems: Configurable workflow engines (stages, SOPs, KPIs, approvals), planned-versus-actual progress tracking, procurement (MR → PR → PO → GRN), inventory, maintenance, accounting and VAT

Frontend & AI: JavaScript (ES6+), React, TypeScript, PWA, bilingual RTL/LTR interfaces; WebRTC, Socket.IO; LLM integration for data extraction and automation

EXPERIENCE

Tatweer Digital — Founder & Software Engineer, Riyadh — Oct 2025 – Present

- Delivered 4 workflow and task-management systems configured from the Tatweer platform, each with its own SOPs, KPIs and dashboards, for construction, interior finishing and project-based companies.
- Implemented planned-versus-actual workflows aligned with real site sequencing, and workforce, task, site-progress and client management for finishing teams.
- Delivered 5 immersive 3D websites for client companies, and a 3D configurator with 4D construction simulation for a residential developer (see Projects).

Enzar Operation & Maintenance Co. — Software Engineer, Riyadh — Feb 2018 – Sep 2025

- Built and led the company's technology function as its only engineer, working within the management team: client solution meetings, internal systems and deployment.
- Identified process gaps in the operations of a Saudi government security organization and presented a working prototype to department leadership; its adoption grew into systems for 3 departments, including warehouse inventory, used by hundreds of staff and still in operation.
- Built the company's internal management system and ERP modules for procurement, inventory, maintenance and finance from scratch, replacing spreadsheets and manual workflows.
- Shipped a PWA with offline fallback for field staff on low-connectivity networks, with WebRTC and Socket.IO real-time coordination.
- Kept key screens loading in ~1.1s under production load through query optimization and caching.
- Supported the company's CCTV and access-control (road blocker) site installation projects over several years.
- Completed the contract in Sep 2025 and continued supporting the company remotely, handing over its systems to the new technical team.

Wedian Technical Co. — Assistant Manager → Branch Manager, Jeddah Apr 2014 – Jan 2018

- Promoted to Branch Manager of an electronics maintenance company; ran operations, procurement and IT, and built the company's ERP alongside management duties; it remained in use after departure.

LandMark Ltd — Assistant Manager, Egypt Mar 2012 – Apr 2014

- Managed international sourcing and procurement for a maintenance company; built an internal web system for interdepartmental coordination.

SELECTED PROJECTS

Tatweer 3D — 4D Construction Simulation & Interior Configurator 2025 – Present

- Converted 2D DWG architectural plans into a data-rich 3D model of a three-floor villa, exported as IFC4 BIM with element properties, a 14-stage 4D construction schedule and 5D pricing linked to model quantities and buyer selections.
- Stage-by-stage 4D simulation of the aluminium-formwork construction method, panel by panel with rebar and pour sequence, across three villa variants of 1,500+ modelled parts each.
- Real-time finish configuration (flooring, walls, kitchens, fixtures) with instant visual updates and live pricing.
- Element inspector exposing each part's group, type and properties; optimized GLB assets for mobile and desktop; bilingual Arabic/English. In production with a residential developer.

Tatweer Platform — Founder & Lead Engineer 2025 – Present

- Grew from the management systems built at three employers into one modular ERP, launched in 2025 and built before AI coding assistants; every client system since is configured from it.
- Configurable workflow engine with custom stages, SOPs, KPIs and approvals, deployed in dedicated editions for interior finishing and construction clients.
- Procurement (MR → PR → PO → GRN) with estimated-versus-actual cost comparison, inventory with serial tracking, and a ledger-driven finance engine with VAT.

EDUCATION & CERTIFICATIONS

- B.Sc. Information Systems — Future Academy, Egypt (2013)
- Full-Stack Web Development Diploma — YAT Learning
- CCNA Training & Certificate (in-lab exam) — Cairo University, Faculty of Engineering