

Drar Ramadan Abo Akshishita

Senior Full-Stack & Cross-Platform Engineer | AI & Computer Vision Integration

Libya • +218 91 939 4354 • zzxxccz908@gmail.com

GitHub: github.com/DerarRamadan • LinkedIn: [{{LINKEDIN_URL}}](https://www.linkedin.com/in/derar-ramadan-908081222/) • Portfolio: [{{PORTFOLIO_URL}}](https://derar-ramadan.github.io/Portfolio/)

Executive Summary

Senior Full-Stack and Cross-Platform Engineer with 3+ years of technical department leadership across public-sector governance and commercial software enterprises. Proven architect in engineering high-reliability multi-tenant web platforms, low-latency desktop suites (Rust/Tauri, Fastify, React 19), cross-platform mobile apps (Flutter, Capacitor 7), and enterprise data solutions. Active Master's researcher in Artificial Intelligence (Ranked 1st in entrance exam), specializing in Vision-First Retrieval-Augmented Generation (RAG) and Optical Context Compression (90–95% token reduction).

Core Technical Competencies

- **Frontend & UI Engineering:** React 19, Vue 3, Nuxt 4, Next.js, TypeScript, Tailwind CSS 4, Radix UI / shadcn, i18next (Bilingual AR/EN & RTL), Framer Motion
 - **Backend & Distributed Systems:** Fastify 5, Node.js, Bun, Express.js, Encore.dev, RESTful APIs, WebSockets, OAuth2 (Google, Apple, Facebook), JWT, Zod
 - **Mobile & Desktop Development:** Tauri (Rust), Capacitor 7 (Android), Electron, Flutter, Native Android (Kotlin, Java)
 - **Databases & Data Modeling:** PostgreSQL, SQLite (Drizzle ORM, Prisma, better-sqlite3), MongoDB, Redis, Supabase, Firebase, Directus CMS
 - **AI & Computer Vision:** Vision-First RAG Architecture, DeepSeek-OCR, ChromaDB, Ollama (Gemma 3n), Sentence-BERT, PyTorch, Python
 - **DevOps & Architecture:** Docker, Docker Compose, Coolify, Turborepo, GitHub Actions (CI/CD), NSIS Single-EXE Packaging, GIS (Mapbox, Leaflet, Turf.js)
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Professional Experience

Head of Programming Department | Ministry of Agriculture (Information & Documentation Center, Libya)

Jun 2023 – Present - Spearheaded national digital transformation initiatives, directing the architecture and software lifecycle of mission-critical internal governance and data platforms. - Architected a high-throughput agricultural data and archiving platform (React, Fastify, SQLite, Flutter) to manage national records with robust data integrity and offline capabilities. - Directed the technical delivery of a municipal complaints management backend system (Express.js, TypeScript, PostgreSQL) paired with a React 19 administrative portal featuring dynamic Swagger documentation, automated PDFKit reports, and CSV data export pipelines. - Integrated a GIS Road and Land Parcels viewer extension (Vue 3, Directus, Mapbox/Leaflet, Turf.js) for spatial analysis and boundary validation of agricultural regions. - Managed and mentored engineering personnel, establishing strict code-review workflows, automated test standards, and database optimization practices.

Head of Programming Department & Lead Trainer | Asas Al-Mateen IT Company

May 2023 – Present - Direct the software engineering division in architecting, scoping, and shipping enterprise commercial web, mobile, and desktop applications. - Established and executed an intensive Full-Stack (MEVN/TS) training program for a 4-member developer team, elevating production readiness and team delivery velocity. - Engineered institutional student registration systems and LMS architectures for higher-education establishments (Higher Institute of Science and Technology, Rigdaleen; Higher Institute of Medical Sciences, Al-Jmail), replacing manual paper workflows with automated student intake pipelines. - Implemented robust continuous deployment pipelines using Docker and Coolify, reducing release friction across multi-service client rollouts.

Technical Case Studies

1. ASAS-TM — Multi-Tenant E-Commerce Platform

- **Problem:** Required a scalable, multi-tenant digital commerce infrastructure supporting unified mobile and web client channels, multi-provider identity, and secure media orchestration.
- **Architecture:** Designed a modular Fastify 5 + TypeScript + PostgreSQL backend with Redis caching and Docker orchestration. Built unified OAuth2 authentication (Google, Apple, Facebook via Passport) with hybrid

JWT/session security. Developed a custom database migration/seed CLI, automated media backups, security auditing scripts, and version-controlled frontend-SDK package exports. Paired with a Vue 3 + Capacitor 7 Android mobile client (Tailwind CSS 4, TypeScript).

- **Impact:** Delivered a production-ready, multi-tenant foundation capable of handling real-time tenant provisioning and cross-platform mobile commerce with zero-downtime deployment workflows.

2. Sink Medical Services — High-Reliability Monorepo Desktop Suite (Al-Rakha Clinic)

- **Problem:** Needed a localized, highly reliable medical and operations desktop suite for multi-department clinics requiring thermal printing, biometric attendance, financial remittances, and automated offline-first data sync without high memory overhead.
- **Architecture:** Engineered a Bun + Turborepo monorepo spanning 7+ integrated products (Clinic Management, Fingerprint Attendance “Watira”, Financial Remittances, Access Guard, Central Warehouse, Oil-Shop POS, Database Server, and Relay Hub). Built each application on a React 19 frontend, embedded Fastify microserver (Drizzle ORM + SQLite + Zod), and a Tauri (Rust) desktop runtime utilizing UDP local-network server discovery, single-binary EXE compilation (pkg / NSIS), automated SQLite snapshot backups, audit trails, and ESC/POS thermal printing.
- **Impact:** Replaced memory-heavy Electron runtimes with sub-50MB Rust/Tauri native binaries; guaranteed full bilingual Arabic/English RTL workflow reliability validated through automated CI internationalization test suites.

3. Enterprise Food Delivery & Logistics Monorepo Platform

- **Problem:** Required an end-to-end multi-party logistics and food ordering ecosystem coordinating customer, restaurant operator, delivery driver, and administrative roles.
- **Architecture:** Architected a pnpm monorepo housing dedicated frontend applications (Customer Portal, Restaurant Dashboard, Driver Portal, Admin Console) and unified backend services. Containerized the entire infrastructure via Docker Compose with automated deployment orchestration on Coolify. Authored exhaustive end-to-end verification suites validating mission-critical lifecycles (real-time order status, geofenced zone delivery fee calculations, shopping cart state, and financial reconciliation).
- **Impact:** Achieved verifiable end-to-end order tracking across 4 discrete user roles with automated zero-touch deployments and deterministic zone-pricing mechanics.

Selected Client & Public-Sector Platforms

- **Delivered 15+ bilingual (AR/EN) commercial and municipal platforms** spanning construction, marble/granite manufacturing, logistics, medical research, food production, and luxury chalet bookings using React 19, Nuxt 4, Tailwind CSS 4, i18next, and Express/Fastify backends (e.g., Al-Qadi Marble, Duroob Al-Sahel Logistics, Badaier Al-Watan, Zwara Booking Portal, and Libyan Center for Medical Research).
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Education & Research

Master of Science in Computer Science (Artificial Intelligence)

Libyan Academy for Postgraduate Studies, Janzour | 2024 – Present - **Ranked 1st** in the competitive postgraduate entrance examination. - **Thesis:** *A Vision-First Architecture for Enhanced Retrieval through Optical Context Compression* (Supervisor: Asst. Prof. Dr. Adel Al-Ghaber). - **Research Scope:** - Pioneered a dual-mode RAG query agent evaluating vision-first document understanding against standard text-based retrieval baselines. - Implemented Optical Context Compression via **DeepSeek-OCR**, achieving a **90–95% reduction in token count** while fully preserving spatial layout, tabular structures, and hierarchical figure annotations. - Developed an automated multi-dimensional AI-Judge evaluation framework (using Gemma 3n via Ollama, ChromaDB, and Sentence-BERT) benchmarking 150 factual, analytical, structural, and synthesis queries over 30 academic arXiv papers. - Optimized local inference using 4-bit/8-bit quantization on an NVIDIA RTX 4060 GPU environment with PyTorch and Python.

Bachelor of Science in Computer Science

Sabratha University, Faculty of Science, Rigdaleen | 2019 – 2022 - **Grade:** 86% (Distinction with Honors) — **Ranked 1st in Class (Valedictorian)**.

Professional Diploma in Mobile Application Development (UI/UX)

Libyan Academy for Telecom and Informatics | 360 Hours - Intensive professional curriculum focusing on mobile application architecture, state management, API integration, and human-centered interface design.

Professional Certifications

- **Duke University:**
 - Programming Foundations with JavaScript, HTML & CSS (*Honors*)

- Java Programming: Solving Problems with Software (*Honors*)
 - Java Programming: Arrays, Lists, and Structured Data
 - Java Programming: Principles of Software Design
 - Java Programming: Build a Recommendation System
 - **UC San Diego:**
 - Object Oriented Programming in Java
 - Data Structures and Performance
 - Advanced Data Structures in Java
 - **Vanderbilt University:** Java for Android
 - **UC Davis:** SQL for Data Science
 - **Cloudera:** Foundations for Big Data Analysis with SQL (*Honors*)
 - **JetBrains:** Kotlin for Java Developers
 - **Google:** Introduction to Git and GitHub
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Languages

- **Arabic:** Native
- **English:** Professional Working Proficiency (Technical & Academic)