Eyad Qasim Raheem

Machine-Learning Engineer · DAAD Scholar (Offenburg University, Germany) · Competing now: Google Quantum AI, NeurIPS 2026 Smart Buildings, Name That LLM · IEEE Big Data Traffic Flow: 88th of 801

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PROFILE

Machine-learning engineer from Baghdad. I train, fine-tune and evaluate models (computer vision, RAG pipelines, LLMs) and take them to production for companies and public-sector clients across Iraq. Three of my commits are merged into PyTorch, with more pull requests open in PyTorch, SGLang and vLLM. Currently building the group-wide ERP of a contracting group at Al-Qabas; previously delivered hybrid-RAG invoice automation at Ashur Banipal and production computer-vision systems at Al Habbar. Full-stack, mobile and ERP systems are what I build for the knowledge and the joy of it, many of them with Claude Code. That includes MARSAD, a sovereign air-gapped national operations platform, iOS apps live on the App Store, a national GIS portal, and 40+ projects shipped through T++, the builder studio and tech school I co-founded. First place at two hackathons (Sustainable IoT, Computiq × GIZ AI); the IoT win earned me a DAAD scholarship to study embedded IoT on the STM32F429I at Offenburg University in Germany.

AI COMPETITIONS (2026)

2026 IEEE Big Data: Traffic Flow Bench — predicting traffic queues. Finished 88th of 801 (top 11%) on the private leaderboard, 7 November 2026: U-Net state models, a bagged gradient-boosting onset model and a boosted model for ongoing queues, under strict no-future-data validation.

Google Quantum AI: Verifiable Quantum Circuit Compilation — compiling quantum circuits as cheaply as can be verified. Runs to 20 January 2027.

NeurIPS 2026: Smart Buildings — controlling heating and cooling for less energy and carbon. Runs to 15 January 2027.

Name That LLM — identifying which of 18 frontier models wrote a text. Runs to 14 January 2027.

Misconception Detection in K-12 Student Math Workings — finding the misconception behind a student's wrong answer. Runs to 17 November 2026.

PROFESSIONAL EXPERIENCE

Senior AI/ML Engineer · Hadarat Ma Bain Al-Nahrain Co. (Al-Qabas Group) Jun 2026 – Present

- Building the group-wide ERP for the Al-Qabas group of companies: dashboards/KPIs, live per-company P&L, project tracking (Gantt, machinery, staff, expenditures across real sites), and a 9-section HR suite covering employees, org chart, attendance, leave, payroll, advances, and performance.
- Built double-entry accounting with server-enforced balanced-journal validation, chart of accounts, trial balance, income statement, and balance sheet; a warehouse module (IN/OUT/TRANSFER/RETURN stock movements, low-stock alerts); a 6-type document archive; and an immutable audit log with diff view — 29 SQLite tables.
- Shipped the Fleet module end to end within two weeks of joining: 116 real vehicles seeded via Excel import, per-vehicle accounting and document tracking, and a live map view.
- Built an Arabic-first, EN-toggle, multi-currency (IQD/USD/EUR/SAR/TRY) UI on React 18/TypeScript/Vite/Tailwind (RTL) + Recharts, with an Express + better-sqlite3 backend; scripted a one-shot Ubuntu deployment (systemd + nginx).
- Rebuilt the group's corporate site, alqabasgroup.com, on Astro 5 + Tailwind v4 — Vercel serverless, bilingual EN/AR, near-zero client JS, rate-limited contact API via Resend.

AI/ML Engineer · **Ashur Banipal Company** Dec 2025 – Mar 2026

- Built an AI Invoice Generation System combining hybrid RAG with a fine-tuned Qwen2.5-32B model for accurate, context-aware commercial invoices in production.
- Built a shipping-document analyzer using Claude for Bills of Lading and Sea Waybills — multi-page, multi-container extraction with HS-code and pricing lookups — plus certificate-of-origin automation.
- Shipped a FastAPI + React + Gemini invoice generator with data enrichment and product-image search, backed by PostgreSQL and Redis.
- Architected AI agents for automated task execution and decision-making; deployed production inference APIs and delivered solutions end to end from model development to deployment.

AI/ML Engineer · **Al Habbar Company** Oct 2025 – Dec 2025

- Developed and deployed YOLO object-detection models for computer-vision applications; built training and deployment pipelines with Roboflow, Python, and Conda.
- Fine-tuned LLaMA models and integrated LiquidAI LFM2-VL-3B and Qwen-1.5B for specialized inference workloads.
- Configured cloud infrastructure on RunPod with Cloudflare tunnels for secure model serving.
- Managed the end-to-end ML pipeline from dataset preparation and training through production deployment.

Co-Founder & Engineer · **T++ (Builder Studio & Tech School)** 2024 – Present

- Co-founded a three-person studio that ships real products while teaching by handing students real projects to own; 40+ shipped projects across AI/ML, full-stack, mobile, IoT, data, and design.
- Flagship builds: Maktaba (book-scale RAG), docextract (local document intelligence), QR Menu (multi-tenant SaaS), Fara (e-scooter platform), and NeuroScan (explainable medical AI).
- Built the team's internal operating system: a React 19 PWA on Fastify, Drizzle, and Postgres with real-time updates via SSE — calendar, project/team management, files, and analytics for the whole studio.
- Operate the studio's production infrastructure: a self-managed VPS (nginx, Docker, systemd, Let's Encrypt) hosting live products including speedit-iq.com, sc-conference-gis.com, and igp.sc-conference-gis.com.
- Built the studio's brand-and-identity practice: print-ready brand-identity systems for clients in Iraq and the UAE — Capital Passion (Dubai), NCGDM (Iraq's National Center for Geospatial Data Management, 44 pages), Qi Card, and Waraq — plus the studio's own brand book.
- Authored a 13-course offline bilingual curriculum for the school — web and backend anatomy, software engineering, databases, DevOps, cybersecurity, mobile, data analysis and engineering, machine learning, AI engineering, agentic AI, and deep learning — with a build workflow and automated content validators.

Freelance Developer 2024 – 2025

- Built and launched Al-Mutanabbi Online (al-mutanabbi.online) — a full-stack bookstore marketplace (React + Express) with admin analytics and a library self-service portal, deployed on Hostinger with full domain and server management.
- Delivered corporate websites for Iraqi businesses — kamaranostora.com (Kamaran Alostora Group), progressinpeace.org (Sinjar peace-building NGO), Snowbird Travel, and Samaa Almuheet — plus QR conference/check-in systems, one deployed on an Ubuntu VPS (Flask + Gunicorn + nginx).
- Built Gac — a public Iraqi customs-duty calculator on the 2026 tariff schedule (live) — and a real-time face-recognition smart mirror integrating OpenCV, the ChatGPT API, and Amazon Polly voice.

Program Coordinator & Executive Team Member · **Rwafed Organization** Jul 2024

- Led planning and execution of community training events; managed logistics, timing, and program structure.

RELEASE ENGINEERING & DELIVERY

Taking codebases written by others — client teams, contracted providers, partner developers — through store review, production deployment, and security sign-off.

MIRA (ميرا) — Beauty-Booking App, live on the App Store 2026

Took another developer's Expo/React Native app from handoff to published (v1.1, Aug 2026): repaired RTL forcing, bundle identifier, and package manifest that regressed on every handoff archive; pinned the distribution certificate after two signing keys were lost in locked keychains; and identified the push-notification layer as dead code with no EAS project ID rather than shipping it as a feature. React Native 0.81 · Expo 54 · Supabase (auth, Postgres, storage, realtime, edge functions).

PROXIMAMOP — HTTPS Migration & App Store Delivery 2026

Migrated a .NET MAUI analyst application and its backing estate from HTTP to HTTPS: 13 endpoints across 7 Windows servers issued Let's Encrypt certificates via win-acme with scheduled auto-renewal, all 20 client source files repointed, and the four DNS-validated hosts documented for manual renewal. Then carried the build through App Store review and the Resolution Center.

Stitch & Sell (نسج و فن) — Marketplace Launch 2026

Took a partner's Iraqi crochet marketplace live on stitch-sell.com and submitted the Expo iOS build to the App Store — reviewer demo account, catalogue photography, and the App Store Connect pipeline. React/Vite + Express/PostgreSQL web · Expo iOS.

GridFlow IQ — Production Deployment & Access Gating 2026

Deployed an Arabic RTL architecture-and-AI platform to production behind nginx, treating run mode and the reverse-proxy gate as one decision — a dev-login build is only ever exposed behind HTTP basic auth — and closed public sign-up. Fixed a module-scope Stripe client that broke production builds. Next.js 16 · Prisma 7 + libSQL · Auth.js v5 · Tailwind v4; live at gridflow.srv1956050.hstgr.cloud.

CE-WARN (Anbar) — Technical Review, Conflict-Monitoring Platform 2026

Technical and delivery-risk review of a conflict-early-warning platform tender: architecture assessment and scope analysis, reported in Arabic.

OPEN-SOURCE CONTRIBUTIONS

PyTorch — 3 commits merged: lost-wakeup races that truncated tailed log output in elastic (#195211), rejecting `Tensor @ scalar` at type-check time (#195220), and rejecting non-positive `pixel_shuffle` factors on the meta device (#195224). 3 more pull requests open across `_refs` shape validation, file-descriptor redirection in elastic launchers, and `__repr__` for LR schedulers.

SGLang — 3 open pull requests: InternVL tile-grid ties broken on area rather than block count, a stale local-IP copy in the dumper replaced with the canonical resolver, and a video decoder that truncated and orphaned its temporary file.

vLLM — open pull request closing a socket leaked by `test_loopback_bind` when bind fails.

FlagGems / FlagOS — authored and submitted a Triton `log10` GPU kernel for the FlagOS Open Computing Global Challenge (Mar 2026).

APEX-UI — extended an open-source autonomous-agent orb interface with a working voice agent: Gemini reasoning, ElevenLabs speech, and hands-free Safari speech recognition with loose wake-name matching, with the orb state following the conversation. Next.js 15 · React 19 · react-three-fiber.

SELECTED PROJECTS

MARSAD (مرصد) — Sovereign National Operations Platform 2026

National awareness and command platform for Iraq, unifying three intelligence systems behind one operator interface: a live global-monitoring dashboard (deck.gl 9.2 + MapLibre, ~500 live sources), OpenCTI threat knowledge graphs (STIX 2.1), and MISP indicator exchange — integrated through purpose-built adapters against their published APIs rather than vendored forks, so each upstream stays independently updatable. Adds an Iraqi GIS/3D layer with live tracking and a full PSIM layer (cameras, access control, video wall, incidents). Designed for air-gapped deployment inside Iraq; includes a 24-document architecture and compliance package, a licence-boundary analysis establishing what can and cannot be sold as proprietary over AGPL/Apache foundations, and a 20-slide Arabic pitch deck. 800+ commits.

Handasa (هندسة) — Platform for Engineering Students 2026

Arabic-first platform for Iraqi engineering students: one Expo app (iOS + Android) covering student, teacher-studio and seller surfaces, plus a Next.js moderation and taxonomy admin, on Supabase. Built on four enforced invariants — capabilities as additive rows rather than a role column (every teacher is also a student), migrations only ever in git, and CI gates that fail the build on hardcoded strings or physical layout properties. pnpm monorepo sharing tokens, types, i18n catalogs and pure domain logic while deliberately duplicating components.

Scrapper Pro — Verified Drug-Data Pipeline 2026

Provenance-guaranteed drug-safety pipeline for a free pharmacy dispensing checker, built to make it mathematically impossible to attach an adverse effect to the wrong drug: every fact's text must be a byte-substring of the SHA-256-pinned source section it claims, drug identity flows only `setid → RxCUI → UNII` with fuzzy name matching banned by a lint over the source tree, output is deterministic via content-addressed fact IDs, and anything failing those checks is quarantined rather than degraded. Rejected the original Medscape scope on robots.txt, data-licensing and unprovable-provenance grounds and rebuilt on public-domain FDA Structured Product Labels.

HORIZONTE — Trilingual Real-Estate Marketplace 2026

Arabic/Kurdish/English property marketplace as a pnpm monorepo: NestJS 11 + Prisma 7 API (JWT auth, Twilio SMS, S3/MinIO uploads, helmet, throttling), Next.js 16/React 19 web with MapLibre, and a Flutter mobile app sharing the consumer slice. Design tokens run a contrast gate *before* generation and sync into Flutter through a build step, so accessibility cannot silently regress across the three clients.

NSA ERP — Leave & Duties Workflow System 2026

Django 5.1/DRF modular monolith with a React + MUI SPA, ported from a legacy Node application deliberately kept runnable as the executable specification for parity, against a 20-screenshot visual acceptance checklist. Enforced definition of done: every endpoint authenticated and role-checked, every state change writing an audit entry (actor, action, target, result), error envelopes that leak no stack traces or internal IDs, and a single `make gate` that must pass.

Iraqi Diamond Exchange 2026

Flutter app for pricing diamonds and precious metals for an Iraqi exchange, in Arabic and English with dollar and dinar pricing, on an Express + PostgreSQL backend with JWT auth — migrated off Supabase to a self-hosted database.

Green Land (Ayman Garden) — Plant-Nursery & Landscaping iOS App 2026

Arabic-first iOS app published on the Apple App Store for an Iraqi nursery business (live since Jun 2026). Features an AI Plant Doctor — photo-based plant-disease diagnosis via an open-source vision model with honest confidence scoring — plus catalog and service booking with cash-on-delivery and local card payments, and guest browsing. Expo/React Native · Node/Express/PostgreSQL · Sign in with Apple + Google OAuth · EN/AR/Kurdish · Sentry · Docker · Xcode Cloud CI.

IGP — National Center for Spatial Data Management 2026

Bilingual national GIS portal for Iraq's National Security Advisory: a public geo-portal plus a 13-section admin CMS (ministries, services, news, members, conferences, media library, users, audit log) with JWT auth, integrating 16+ Iraqi government bodies. Next.js 16 · React 19 · Prisma · Docker + nginx + Let's Encrypt; live at igp.sc-conference-gis.com.

Maktaba — Book-Scale RAG System 2025

Offline-first RAG platform over 1,000+ Arabic/English books (~400k pages): dual OCR (Surya + Qwen2.5-VL for figures), BGE-M3 dense+sparse retrieval into Qdrant with reranking, RAPTOR-style chapter/book summarization for whole-book questions, and a resilient local-first LLM chain (Ollama with cloud fallback) with grounded citations. FastAPI · RQ/Redis ingestion queue · Docker · CI.

docextract (dox) — Local Document-Intelligence Engine 2025

100% local Arabic + English document engine — no cloud, no API keys: faithful extraction of tables with row/column spans, LaTeX equations, and handwriting transcription; AI classification, summarization, and translation; and a self-hosted searchable digital library (SQLite FTS5). Python · Surya · Tesseract · Qwen2.5-VL via llama.cpp (Metal/CUDA).

Dalel (دليل) — Iraqi Legal AI Assistant 2025

Legal AI assistant answering questions on Iraqi law, grounded in a 9 GB corpus of legislation — Claude generation over ChromaDB retrieval with sentence-transformers embeddings. Next.js 16 · FastAPI.

Secure Institutional ERP 2025

Bilingual gov-grade ERP with 29 backend modules (IAM, payroll, procurement, fleet, GIS, incidents, helpdesk, finance): server-enforced RBAC with 4-tier clearance, PostgreSQL row-level security, an append-only tamper-evident audit log, and an offline AI assistant with clearance-filtered natural-language Q&A. Django 5.1/DRF · React 18 (TS) · Celery/Redis; CI-gated (ruff, mypy, pytest, bandit, semgrep, gitleaks); pitched to stakeholders with a 32-slide deck; live demo at speedit-iq.com.

QR Menu — Multi-Tenant Restaurant SaaS 2025

Bilingual (AR/EN) digital-menu SaaS for Iraqi restaurants with strict tenant isolation, a custom Postgres image (pg_uuidv7, pg_trgm), PgBouncer transaction pooling, Lucia session auth, and BullMQ-driven WhatsApp order notifications — tenant-isolation and load tests included. Next.js 14 · Drizzle · Docker microservices; live at sc-conference-gis.com.

Fara (formerly Speedit) — E-Scooter Sharing Platform 2024

Lime-style micromobility platform for Iraq: an Expo/React Native rider app (Google Maps live tracking, QR unlock, AR/EN) backed by Express + PostGIS geospatial queries, Redis, Socket.io live updates, MQTT IoT vehicle telemetry, and Stripe payments — plus an operations dashboard and marketing site.

NeuroScan — Brain-Tumor MRI Classifier 2023 – 2025

4-class MRI brain-tumor classifier (ResNet50 fine-tune) with GradCAM explainability heatmaps and locally generated clinical reports via a local LLM (Ollama); evolved from the 99.93%-accuracy CNN that won the Computiq/GIZ AI hackathon. PyTorch · FastAPI · Next.js · Docker.

Waraq (ورق) — Life-Map Memory App 2025 – 2026

Arabic-first journaling app that visualizes a life as an interactive map of circular photo memories, with a warm, literary RTL-native design and a companion iOS app. Next.js · Prisma · Expo (iOS); live at waraq.app.

Masaar — AI Job-Application Platform 2025

AI-powered job platform: CV analysis, job recommendations and search across 20+ countries via three live job APIs, a Kanban application tracker, and cover-letter generation — 39+ API endpoints. Next.js 14 · TypeScript · Prisma · Claude.

Scraper Studio & ASIN Product Database — Data Engineering 2024 – 2025

Modular, polite web-scraping toolkit (crawling, table extraction, Google Places lead-finder, Iraqi-legislation scraper) with CI and tests — plus an Amazon product database managing 14.7M+ products across a ~13.6 GB dataset with checkpointing and a browser UI. Python · Playwright · Scrapy · DuckDB · SQLite.

YouTube Automation — AI Video Pipeline 2024

Fully automated daily tech-news video pipeline: RSS ingestion → Claude script generation with web search → ElevenLabs TTS → programmatic video assembly → scheduled upload, with built-in cost tracking. Python.

Certificate Generator — Bulk Event Automation 2025

Generated and emailed 850+ personalized bilingual (Arabic RTL / English) conference certificates with bulk SMTP delivery. Python · PIL · PyMuPDF.

Arabic → Chinese Voice Translator 2024

Real-time Iraqi-Arabic-to-Mandarin voice translator with text-to-speech, built fully client-side for privacy (no backend) and optimized for AirPods use. Web Speech API · vanilla JS.

Currently in development: Cardy (gym-membership platform — Fastify/Drizzle/Expo), wedora (Expo app on Cloudflare Workers — Hono, D1, Drizzle, R2, KV), Babelingo (gamified Iraqi-curriculum learning app — Flutter/Flame/Rive), and T-Birde (apparel e-commerce PWA with native iOS via Capacitor + Stripe).

50+ further shipped projects — landing pages, IoT builds, automation tools, and client sites — catalogued at eyadai.dev.

SKILLS

Languages: Python, TypeScript/JavaScript, SQL, Dart, C#

AI/ML: RAG (Qdrant, ChromaDB) · LLM fine-tuning (Qwen, LLaMA) · Local inference (llama.cpp, Ollama) · YOLO & computer vision · PyTorch · TensorFlow · scikit-learn · OCR (Surya, Tesseract) · GradCAM explainability · Claude/Gemini/OpenAI APIs · Prompt engineering

Backend: FastAPI, Django/DRF, Express, Fastify, NestJS, Hono, Flask, REST API design

Frontend & Mobile: React, Next.js, React Native/Expo, Flutter (Riverpod), .NET MAUI, Astro, Tailwind, PWA, Three.js/GSAP · RTL/Arabic-first UI

Data: PostgreSQL (RLS, PostGIS), Redis, SQLite/libSQL, Supabase, Cloudflare D1, Qdrant, ChromaDB, DuckDB, Drizzle/Prisma, BullMQ/RQ

Cloud & DevOps: Docker, nginx, systemd, Let's Encrypt/win-acme, GitHub Actions, Xcode Cloud, EAS, Vercel, RunPod, Cloudflare Workers/D1/R2/KV & Tunnels, Hostinger, VPS administration · App Store Connect & Google Play release pipelines

Geospatial & Intelligence: MapLibre GL, deck.gl, PostGIS · OpenCTI/STIX 2.1, MISP, PSIM · air-gapped deployment

Systems & IoT: MQTT, Socket.io/SSE real-time, STM32, Arduino

Brand & Design: Brand-identity systems and print-ready guides · design tokens with automated contrast gates · Arabic/RTL typography

Quantum Computing: Qiskit — Grover's, Shor's, Bernstein–Vazirani, circuit design

ACHIEVEMENTS

- **Letter of thanks, National Security Advisory of Iraq (Oct 2026).** For volunteer programming at the National Center for Spatial Data Management on the workshop reviewing the draft Cybercrimes Law and a proposed authority or ministry for digital transformation (22 Sep 2026).
- **Council of Representatives of Iraq (Oct 2026).** Attended the parliamentary discussion of the draft Cybercrimes Law.
- **DAAD scholarship, Offenburg University, Germany.** Studied embedded IoT development on the STM32F429I at Offenburg University, a scholarship earned with **1st place at the "Sustainable IoT" hackathon (2023)**: 9 teams in the CORTISSS program (Al-Nahrain × Offenburg University), judged by an international jury including Prof. Dr. Axel Sikora, won with the Smart Mirror project.
- **1st place, Computiq × GIZ AI hackathon (2023).** Deep-learning CNN for tumor diagnosis on a 20,000+ scan dataset — month-long AI hackathon by Computiq and GIZ.
- **Founder — EDURU Tech Club (2025 – Present).** Led student events and training on web development and AI; designed the club's branding and official online presence.
- **FlagOS Open Computing Global Challenge (Mar 2026).** Authored and submitted a Triton log10 GPU kernel for FlagGems, an LLM-inference operator library.
- **Startup Weekend Baghdad (2023).** Built the Dalaley real-estate platform prototype in the 54-hour competition sponsored by GIZ, EarthLink, Computiq, and Hub200.

EDUCATION

B.Sc. Information Engineering — Systems Engineering · Al-Nahrain University, Baghdad

2020 – 2025

Final-year project: lung-cancer risk prediction — 98.96% accuracy with a Random Forest ensemble, class imbalance handled with SMOTE (scikit-learn, XGBoost).

CERTIFICATIONS & TRAINING

Quantum Computing (2026): Quantum Computing Specialization (3 courses) — Packt/Coursera · Quantum Computing with Qiskit & Advanced Algorithms — Packt/Coursera · Python for Quantum Computing — Packt/Coursera · Mathematical Foundations & Quantum Mechanics Essentials — Packt/Coursera

AI & Development (2025 – 2026): Build RAG Applications — IBM/Coursera · Develop Generative AI

Applications — IBM/Coursera · AI Engineering — IBM & Coursera · STM32F429I IoT Development — Offenburg University (DAAD) · Riyada Initiative — Entrepreneurship & Project Development · Leadership and Team Management

Foundation (2022 – 2023): AI Development Training — AI Dojo, Makers Academy · Python Programming — Cisco Academy (Certified) · Telecommunications Operations — Korek Company · Web Development — multiple platforms

SPEAKING & LECTURES

- **AI Technology Lecturer** — Iraqi National Research Center × Iraqi National Security Council (Nov 2024)
- **Smart Cities Workshop** — Baghdad University, College of Engineering
- **AI in Agriculture** — sustainable farming applications, multiple venues
- **Student Career Guidance** — Al-Nahrain University, AI & automation workshops

LANGUAGES

Arabic — Native · English — Professional Proficiency · German — Basic (A1)