Abdulrahman Ahmed Alqahtani

Full-Stack & AI/ML Developer
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PROFESSIONAL SUMMARY

Full-Stack & AI/ML Developer specializing in the end-to-end deployment of scalable, secure N-tier web applications and complex deep learning solutions. Skilled in converting advanced machine learning research (computer vision, quantum-hybrid models) into high-performance, production-ready solutions.

EDUCATION

Bachelor of Science in Computer Science *08/2021 – 06/2026 | Dammam, Saudi Arabia*
Imam Abdulrahman Bin Faisal University (IAU) | Second-Class Honors | GPA: 4.44/5.00

TECHNICAL SKILLS

Programming Languages: Python, Java, C++, C#, JavaScript, TypeScript, SQL (PostgreSQL, Oracle DB, MySQL, SQLite)
Web & Full-Stack: React (TypeScript), Vue.js 3 (Composition API), Angular, Spring Boot, FastAPI, ASP.NET MVC 5, Vite, Bun, RabbitMQ, TanStack Query, Tailwind, PrimeVue, Bootstrap, RESTful API, Microservices Architecture, HTML, CSS
AI / Machine Learning: PyTorch, CrewAI, Pydantic, YOLOv11, ResNet50, PennyLane, Scikit-Learn, Pandas, NumPy, XGBoost, LightGBM, OpenCV
Tools & Security: Git, GitHub, Docker, Linux, Spring Security, JWT, OAuth2, Flyway, JUnit, Mockito, Testcontainers, Dapper ORM, MiniProfiler, OpenTelemetry, Jaeger, Cloudflare Tunnels, BCrypt, RBAC, Rate Limiting, N-tier Architecture, Caching, Logging
Methodologies: Agile, Waterfall, SDLC

EXPERIENCE

Full-Stack Lead Developer (COOP) *06/2025 – 08/2025 | Dammam, Saudi Arabia*
Strategic Planning Office – Vice Presidency for Academic Affairs (VPAA), IAU

- Architected a scalable **N-tier** web platform using **ASP.NET MVC 5**, utilizing **Dapper ORM** and server-side caching to minimize data mapping overhead and optimize **Oracle DB** query performance across service calls.
- Designed a **Role-Based Access Control** (RBAC) system with scoped data access, alongside a bilingual (Arabic/English) UI featuring interactive **ApexCharts** analytics dashboards.
- Eliminated manual notification and scheduling admin work by automating academic process workflows using **Oracle DBMS_SCHEDULER**.
- Identified and resolved compute bottlenecks via **MiniProfiler** profiling.
- Led the full **SDLC**, encompassing architecture design, implementation, code reviews, and **Git**-based version control.
- Project Link: github.com/AbdulrahmanQht/VPAA-Gate

PROJECTS

Hybrid Quantum-Classical Neural Network for Industrial Defect Detection (Graduation Project)

- Served as **Programming Lead** to architect a **hybrid-fusion** system combining **PyTorch** and **PennyLane**, improving pipeline defect detection and noise robustness over **classical CNN** baselines.
- Built a production-ready stateless backend using **FastAPI** with **SlowAPI rate limiting**, CSP secure headers, and model warm-up logic to eliminate cold-start latency.
- Implemented a high-performance SPA frontend with **Vue.js 3, PrimeVue, Tailwind CSS**, dark/light mode, and vue-i18n bilingual support.
- Managed the full ML lifecycle, achieving a peak macro **F1-score of 95.67%** and formally confirming quantum advantage (geometric difference of 269.57) across 7 distinct noise profiles.
- Containerized the full-stack application with **Docker** and deployed the production backend via **Cloudflare Tunnels** to ensure secure, reliable external access.
- Project Link: github.com/AbdulrahmanQht/Quantum-Hybrid-Defect-Detector

TracePilot AI | Multi-Agent AI Coding-Agent Trust Auditor

- Architected a polyglot microservices platform using **Spring Boot, FastAPI, React, and RabbitMQ**, decoupling trace ingestion from asynchronous multi-agent AI analysis.
- Implemented secure authentication using **Spring Security**, **JWT access/refresh tokens, OAuth2** (Google & GitHub), email verification, password reset, and role-based authorization.
- Built a **CrewAI** multi-agent auditing pipeline with parallel asynchronous execution, generating structured **Pydantic**-validated reliability reports from raw coding-agent traces.
- Improved platform resilience through **dead-letter queues** (DLQ), idempotent message processing, and **rate limiting** across authentication and public APIs to guarantee message delivery integrity under service failures.
- Instrumented distributed tracing with **OpenTelemetry** and **Jaeger**, enabling end-to-end request visualization across HTTP services, RabbitMQ messaging, and AI workers to accelerate incident diagnosis.
- Designed the **PostgreSQL** database schema using **Flyway** migrations and implemented persistence with **Spring Data JPA/Hibernate**, enabling zero-downtime schema evolution through incrementally versioned migrations.
- Built the React frontend with **TypeScript, Vite, Bun, TanStack Query, and Tailwind CSS**, including audit dashboards and reliability trend visualizations, then containerized and deployed the full platform.
- Containerized and deployed a distributed microservices platform across **Netlify, Render, Railway, Neon PostgreSQL, and CloudAMQP**, integrating observability with **OpenTelemetry/Jaeger** and production service monitoring.
- Project Link: github.com/AbdulrahmanQht/TracePilot-Ai