Roaa Khaldoon

Software Engineer

ruaakhuldoon.26@gmail.com |linkedin.com/in/roaa-khaldoon/ | github.com/RoaaK95

PROFESSIONAL SUMMARY

Software Engineer with 5+ years of experience building production software across startup and enterprise environments. Experienced in React, TypeScript, Python, and C#, with a track record of shipping data-driven applications, real-time systems, and simulation-based projects. Built and owned frontend systems for AI-powered products, integrated external services and backend APIs, and developed modular simulation architectures for autonomous agent behaviour and state-driven systems. Strong at turning complex workflows into reliable software, working across product requirements and technical implementation, and delivering quickly in fast-moving environments. Supported by German NGO Imagine Foundation, open to relocation.

TECHNICAL EXPERTISE

Frontend: React, TypeScript, Python, JavaScript, Zustand, Tailwind CSS, HTML/CSS, TanStack Query
Backend / APIs: FastAPI, REST APIs, API integration, JSON-based service integration
Systems / Engineering: Github, Git, CI/CD, testing, debugging, performance optimisation
Simulation / Data / Real-time: Unity, C#, state machines, autonomous agents, real-time systems

PROFESSIONAL EXPERIENCE

Software Engineer / Frontend Engineer | **Thakaa (Tech Startup),** Baghdad, Iraq | Jan 2026 – May 2026

Tech: React, TypeScript, Zustand, FastAPI, Python, Tailwind CSS

- Built and shipped a real-time conversational learning platform integrating multiple AI services through Python/FastAPI-based backend systems.
- Designed stateful application architecture to coordinate high-frequency streaming updates, asynchronous service responses, and complex user interaction flows.
- Worked across frontend and backend integration boundaries to improve reliability of API communication, local development workflows, and system responsiveness.
- Developed reusable components and scalable client-side architecture to support rapid iteration of product features in a startup environment.
- Optimised rendering performance and state updates for data-intensive, real-time user sessions.

Software Engineer / Frontend Engineer | **Wataneyya (Tech),** Baghdad, Iraq | May 2025 – Jan 2026

Tech: React, JavaScript, REST APIs, CSS, Testing Library

- Delivered production business platforms for government workflows including registration, licensing, appointment handling, and digital certificate processes.
- Built data-intensive interfaces integrated with multiple backend services and secure APIs, supporting operational workflows for large numbers of users.
- Translated complex business rules into maintainable application logic and reusable system components.
- Improved performance, maintainability, and reliability of large multi-role applications through better state handling and modular UI architecture.

Software Engineer | **Ministry of Industry,** Baghdad, Iraq | Nov 2020 – May 2025

Tech: React, JavaScript, REST APIs, CSS, Testing Library

- Maintained and supported internal software systems used across operational departments.
- Investigated and resolved production issues, contributing to application stability and continuity of service.
- Assisted with testing, deployment, and ongoing system maintenance in enterprise environments.

EDUCATION

BSc Software Engineering, University of Al-Iraqi, *Baghdad, Iraq*

CERTIFICATIONS

IELTS UKVI Academic – Band 7.5

PROJECTS

Clean Air Day Finder | Repo: github.com/RoaaK95/Clean-Air-Day-Finder

Tech: React, TypeScript, TanStack Query, Zod, Recharts, Vercel

- Built a data-driven web application that transformed external environmental API data into actionable user insights.
- Implemented typed API integration, validation, caching, and data-fetching flows using TanStack Query and Zod.
- Designed a reliable deployment workflow and maintainable frontend architecture for a production-style personal project.

Animal Farm – Autonomous Agent Simulation | **Repo:** github.com/RoaaK95/Autonomous_Agents

Tech: Unity, C#, Object-Oriented Design, Simulation Systems

- Built a real-time multi-agent simulation modelling autonomous behaviour through steering algorithms, state-driven logic, and environmental interactions.
- Developed modular systems for movement, decision-making, and behaviour switching, enabling extensible and reusable simulation architecture.
- Optimised update loops and agent calculations to improve runtime performance for larger numbers of concurrent entities.

Dragon's Pit – Finite State Machine Demo | **Repo:** github.com/RoaaK95/Finite-State-Machine-Demo

Tech: Unity, C#, Object-Oriented Design, Simulation Systems

- Engineered a deterministic finite state machine architecture to manage behaviour transitions, movement logic, and combat interactions.
- Separated state logic, movement systems, and runtime behaviour into reusable modules to improve maintainability and iteration speed.
- Used simulation-style problem solving to model predictable system behaviour under changing runtime conditions.