

Zahraa Sadeq

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EXPERIENCE

Senior Software Engineer (Remote), Sappers Group

Santa Clara, CA | March 2025 – Present

- Build LLM API integrations, AI agents, RAG systems, prompt engineering and Python automation workflows for enterprise productivity tools.
- Support AWS cloud architecture, deployment, networking, security and infrastructure management.
- Containerize and deploy services with Docker and Kubernetes, including orchestration, scaling and cloud-native deployments.
- Build CI/CD pipelines with GitHub Actions, Jenkins and Terraform, automating deployments and release engineering as infrastructure-as-code.
- Improve reliability of distributed systems with telemetry, tracing and logging in Prometheus and Grafana, and debug issues at scale.
- Contribute modern C++17/20 for embedded Linux: multithreading, performance optimization and networking.
- Use Python for infrastructure and automation: scripting, test frameworks, infrastructure tooling and AI integration.
- Consult remotely with clients: technical writing, solution architecture discussions, and translating technical problems into business value.

Software Engineer, Raytheon

Tucson, AZ | August 2020 – March 2025

- Developed high-performance C/C++ software for real-time distributed systems on Linux and Windows in multi-processor embedded environments (PPC and DSP, VxWorks).
- Debugged complex system-level failures across distributed subsystems in Software-in-the-Loop (SIL) and Hardware-in-the-Loop (HIL) test environments.
- Led root-cause analysis of mission-critical software and hardware integration issues, improving system reliability and reducing recurring defects.
- Designed and maintained Python automation tooling adopted across integration and verification teams, significantly reducing manual test execution time.
- Served as Build Manager: validated integrated software builds, coordinated releases and supported multi-team integration.
- Wrote automated unit and module tests for mission-critical C/C++ with GoogleTest and GMock.
- Conducted peer code reviews and authored technical documentation on debugging procedures, system behavior and failure analysis.

Software Engineer Intern, Raytheon

Tucson, AZ | June 2020 – August 2020

- Wrote Lua scripts for Wireshark to analyze and filter traffic between distributed system components.
- Debugged software and hardware integration issues through packet analysis and protocol inspection.
- Wrote operating guides for the mission computer lab test environment.

Integration & Verification Engineer Intern, Raytheon

Tucson, AZ | June 2019 – July 2019

- Supported debugging and validation of integrated software and hardware systems.
- Updated legacy test procedures and documentation with systems engineering leadership.

PROJECTS

Nesvia, nesvia.app

Founder and sole engineer

- Mobile app that reads product labels with a vision model, matches every ingredient against public scientific sources (PubChem, EPA CompTox, openFDA, USDA) and scores each product 0–100.
- Built end to end: Expo / React Native app, FastAPI and PostgreSQL backend, ingredient-matching and scoring pipeline with an explicit unrated state for unreadable products.

Swazona Media, swazona.media

Co-builder

- Arabic-first AI marketing agency where a team of agents (strategist, copywriter, designer, media buyer, analyst and more) plans, produces and publishes a month of content.
- Orchestration is a PostgreSQL state machine, not an LLM: every step is a recorded transition, every post waits for owner approval, and ad spend stays inside hard budget envelopes. FastAPI, Taskiq, Next.js, Meta Graph API.

FractalEyes

Senior design project, University of Arizona | 2019 – 2020

- Medical imaging application in Python and OpenCV for image segmentation and feature extraction (luminosity, granularity, color frequency), with an Electron desktop GUI. Awarded Best Implementation of Agile Methodology.

SKILLS

AI & ML: LLM APIs, AI agents, RAG, Prompt engineering, Multi-agent orchestration, Computer vision, OpenCV

Languages: Python, C++ (17/20), C, TypeScript, JavaScript, SQL, Bash, Lua, Java

Cloud & DevOps: AWS, Docker, Kubernetes, Terraform, GitHub Actions, Jenkins, CI/CD, Prometheus, Grafana

Backend & Web: FastAPI, PostgreSQL, MySQL, Node.js, Next.js, React Native, Electron

Embedded & Systems: Linux, VxWorks, RTOS, FreeRTOS, DSP, PPC, FPGA, Verilog, Distributed systems

Testing & Tools: GoogleTest, GMock, SIL / HIL testing, GDB, Wireshark, Git, Agile / Scrum

Spoken languages: English, Arabic

EDUCATION

M.S., Electrical & Computer Engineering, University of Arizona

2020 – 2022 | GPA 3.8

B.S., Electrical & Computer Engineering, University of Arizona

2015 – 2020 | GPA 3.4