

Tariq Amarneh

Senior Software Engineer | AI Agents, LLM Systems and Backend Engineering

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PROFESSIONAL SUMMARY

Senior Software Engineer with 2.5+ years of experience designing and shipping production AI agents, LLM applications and scalable backend services at Amazon, PwC and fast-growing AI startups. Builds multi-step agents with LangGraph, LangChain and LangSmith, retrieval-augmented generation (RAG) on vector databases, and the Python, Kotlin and Java services behind them on GCP, AWS and Azure. Track record of measurable results: 2–5x faster agent responses, 80% more accurate document retrieval, and a compliance rollout covering 15M+ items. Works across the stack, from agent architecture and evaluation to APIs, data pipelines and React interfaces.

TECHNICAL SKILLS

AI and LLM: LangGraph, LangChain, LangSmith, AI agents, multi-agent orchestration, RAG, embeddings, vector databases (Milvus, ChromaDB), prompt engineering, structured output, LLM evaluation, OpenAI, Gemini

Languages: Python, Kotlin, Java, TypeScript, JavaScript, SQL

Backend: FastAPI, Spring Boot, Ktor, REST APIs, microservices, event-driven architecture, asyncio, jOOQ

Data: PostgreSQL, Redis, MongoDB, BigQuery, Alembic, Flyway, data pipelines

Cloud and DevOps: Google Cloud (Cloud Run, Cloud Run Jobs, Pub/Sub, BigQuery), AWS (Lambda, EC2), Azure, Docker, CI/CD, GitHub Actions

Frontend: React, Next.js, TypeScript, Tailwind CSS

Practices: System design, SOLID principles, automated testing (pytest), static typing (mypy strict), observability, code review, Agile

PROFESSIONAL EXPERIENCE

Senior Software Engineer

01/2026 - Present

BusinessChat, Amman, Jordan | Conversational AI platform running AI agents for businesses on WhatsApp

- Designed and built the LangGraph agent that extended the platform into healthcare, answering patient questions against each clinic's doctors, specialties, services and branches, checking live availability and booking appointments end to end in Arabic and English.
- Architected a schema-driven adaptive agent (guard, capability router, entity extraction and resolution, disambiguation, confirmation and final-review nodes) that onboards new business verticals through configuration instead of new code.
- Built Procedures (AI Workflows) from compiler to UI: admins write business workflows in plain language, which are compiled into a control-flow graph and executed by a deterministic runtime that limits LLM calls to dispatch, judgment, intake and replies.
- Reduced e-commerce agent response time from 50–80s to 10–40s by profiling LangSmith traces and reworking the slowest graph paths, substantially improving the conversational experience.
- Improved the document and FAQ ingestion pipeline (loading, chunking, embedding into Milvus), increasing retrieval accuracy by 20%, and added knowledge-base conflict detection with a review-and-resolve workflow.
- Built a nightly LLM regression suite that grades agent conversations from their traces across healthcare, multi-intent and workflow tiers and reports results to Slack.
- Developed Kotlin and Spring Boot services for a generic entity-and-relation store with event-driven Pub/Sub sync, plus a schema translator on Cloud Run Jobs, so any vertical can sync its catalog to the agent.
- Raised engineering quality of the Python AI engine: migrated it to strict mypy (fixing 15 latent bugs), enforced a layered architecture free of import cycles, root-caused a production memory leak, and cut LangSmith tracing costs through sampling and payload trimming.
- Delivered 700+ commits across the Python AI engine, Kotlin services and React/TypeScript admin console, including agent configuration, knowledge base, workflow editor and AI insights reporting.

Software Development Engineer

Amazon, Amman, Jordan

- Led a cross-functional compliance initiative in Turkey to print product serial numbers on invoices, coordinating legal, operations and engineering teams; the rollout covered 15M+ items and improved fulfillment center accuracy.
- Built automated 2-hour delivery workflows for the UAE and Saudi Arabia, including auto-cancellation, refunds for failed deliveries and shipping-fee refunds for delayed orders, improving SLA compliance and customer satisfaction scores.
- Developed and operated backend services on AWS Lambda and EC2 for large-scale e-commerce fulfillment operations, applying Amazon's Leadership Principles of Customer Obsession, Ownership and Deliver Results.

Java Software Engineer

09/2024 - 11/2024

ProgressSoft, Amman, Jordan

- Refactored and strengthened the backend architecture of a financial platform serving 14+ banks by applying SOLID principles in Java and Spring Boot, improving maintainability and speeding up onboarding of new banking clients.

AI Engineer

12/2023 - 07/2024

PwC, Amman, Jordan

- Designed and built a semantic document search engine for NEOM using OpenAI embeddings and ChromaDB, improving document retrieval accuracy by 80% and reducing average search time by 65%.
- Collaborated with client stakeholders and AI teams to align search capabilities with business objectives, delivering context-aware results to 300,000+ users.

Predictive Data Analyst Intern

06/2022 - 09/2022

Arab Bank, Amman, Jordan

- Built and deployed time-series forecasting models to predict sales trends and presented the findings to executive leadership, enabling data-driven inventory optimization across 3 business units.

EDUCATION

Bachelor of Science in Data Science and Artificial Intelligence

Princess Sumaya University for Technology, Amman, Jordan | 10/2019 - 07/2023 | GPA: 82%

CERTIFICATIONS

Microsoft Certified: Azure AI Fundamentals (AI-900), Microsoft

Professional Data Analysis, Google Cloud Platform | 2019

LANGUAGES

Arabic (Native), English (Fluent)