

Ali Asghar

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Experience

Software Engineer Backend | Kaleidoscope

Aug 2023 – Present

- Built backend systems for Kscope, a unified context platform that connects 20+ cloud, DevOps, and security tools (AWS, Azure, GCP, GitHub, Kubernetes, ServiceNow) into a centralized graph on Amazon Neptune, powering security posture management and AI governance across Cloud, Application, AI, and Data Security domains.
- Designed and implemented Go-based data integration crawlers that pull and normalize data from external REST and GraphQL APIs, map responses into typed Go structs, and generate graph nodes and edges for ingestion into Neptune; owned multiple crawlers end-to-end from design through production support and contributed to code review practices across the codebase.
- Built a pre-crawl credential validation framework deployed across 23 crawlers, verifying customer API keys and cloud permissions before execution — reducing crawl failure rate by ~30% and eliminating minutes of wasted compute per failed run across all customer accounts.
- Wrote graph and SQL queries driving the platform's security dashboards, risk visualizations, and drill-down views across multiple security modules; designed multi-factor risk scoring algorithms that evaluate factors such as threat severity, attack surface exposure, access permissions, data sensitivity, and compliance posture to surface and prioritize the highest-risk assets for customers.
- Designed and built the Asset Registry (CMDB) from scratch: a graph-based asset management system with a GraphQL API on AWS AppSync, serverless Go backend on AWS Lambda with Cognito authentication, and a React/TypeScript web dashboard — deployed across four AWS CDK infrastructure stacks.
- Set up CI/CD pipelines with GitHub Actions and AWS CDK, and built a LocalStack-based local development environment emulating AppSync, Lambda, and Cognito — catching schema mismatches, missing resolvers, and Lambda errors locally that previously only surfaced post-deployment in production, and reducing the integration testing cycle from ~15 minutes per cloud deploy to under 2 minutes locally.
- Implemented zero-downtime schema deployments through an automated migration system that runs ordered mutations per release, seeds a canonical business context model, and eliminates manual migration steps — enabling reliable, hands-free rollouts across all environments.

Certifications

AWS Certified Solutions Architect – Associate (SAA-C03)

Amazon Web Services 2026

AWS Certified Machine Learning Engineer – Associate (MLA-C01)

Amazon Web Services 2026

Projects

Forge – Website Builder | Node.js, Fastify, Next.js, TypeScript, PostgreSQL

- Full-stack SaaS website builder for small businesses – launch a live site from a template in minutes, with CMS dashboard, media manager, lead capture forms, and per-site page-view analytics.
- Implemented multi-tenant data isolation, dynamic content rendering across customer-specific routes, and an image upload pipeline backed by Fastify and PostgreSQL.

Agent Runtime | Go, Next.js, TypeScript, PostgreSQL, WebSockets

- Built a multi-step agentic loop with real-time streaming (SSE + WebSockets) and a tool execution layer (Python sandbox, web search, Wikipedia, URL fetch) – delivering sub-second token-by-token responses with robust parsing for inconsistent model output formats.

VaultShare – Secure File Sharing & View Tracking | Django, DRF, Next.js, TypeScript, PostgreSQL

- Secure file-sharing web app with controlled links (per-recipient view limits, time-based expiry, view-only mode), backend-proxied delivery, accurate view counting, and screenshot deterrence (watermarks / DevTools detection).

Open Source

Merged contributions across major OSS repositories – view all contributions.

Skills

Languages: Golang, Python, JavaScript, SQL, Gremlin, GraphQL

Tools: Flask, Next.js, AWS (Lambda, AppSync, Amplify, Cognito, S3), GitHub Actions, Kubernetes, Docker

Education

Lahore University of Management Sciences (LUMS)

Bachelors of Science in Computer Science