

ADAM KHALAF

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EXPERIENCE

Amazon

Arlington, VA

Software Development Engineer I

Oct 2024 - Present

- Reduced landing page tm99 latency by 71% (3.01s to 0.7s) by replacing user-level permissions fetching with project-level evaluation, resolving a scaling blocker for users with extensive permissions
- Enabled entity-level authorization across 7 services by building a hierarchy-based permission evaluation API on ECS-Fargate, serving 200+ transactions per minute at 281ms tm99 latency
- Saved 480+ hours annually for the budget management team by designing an AWS Step Functions workflow to validate and close expired budgets, surfacing \$200M in unspent annual savings to downstream data lakes
- Reduced regression risk by 63% (line coverage: 43.6% to 71%) by implementing end-to-end integration tests across critical service paths
- Decreased ticket investigation and resolution time by 30% by integrating a coding/publishing agent into a multi-agent orchestration system using CLI Agent Orchestrator and Model Context Protocol (MCP)
- Drove adoption of TDD and integration testing practices by leading team learning sessions on SDLC improvements and automated dev stack deployments

Peraton

Herndon, VA

Software Engineer, Associate

Jan 2024 - Oct 2024

- Reduced data processing time by 62% by refactoring Python and Pandas pipelines to batch-upload 50K+ records daily to S3 and PostgreSQL, supporting 15 analysts across 3 intelligence teams
- Improved analyst query response time by 40% by designing a GraphQL API in Django integrated with PostgreSQL (RDS), replacing manual SQL workflows for 4 complex dataset types
- Reduced deployment time by 45% by building a GitLab CI pipeline automating build, test, and deployment on AWS, eliminating 6 hours of weekly manual deployment effort
- Accelerated new hire onboarding by mentoring 3 engineers and 2 interns, reducing average time to first contribution from 4 weeks to 2 weeks

Peraton

Reston, VA

Software Engineer, Intern

Jun 2023 - Aug 2023

- Developed a satellite and ground asset scheduling application using Spring Framework, enabling operators to coordinate 20+ assets across 5 ground stations
- Reduced manual data lookup time by 70% by building a RESTful API in Spring Boot integrated with PostgreSQL, serving 8 mission operations teams
- Reduced environment setup time by 80% by containerizing backend services with Docker, cutting new developer onboarding from 2 days to 4 hours

University of Maryland

College Park, MD

Undergraduate Research Assistant

Jun 2022 - Aug 2022

- Improved VPN detection accuracy by 35% by building a Python-based traffic collection tool that instantiated EC2 servers and captured 500K+ network packets across 12 VPN providers
- Identified novel VPN server signatures by analyzing protocol-level traffic patterns with Wireshark and Pandas, contributing findings to a published research report

EDUCATION

University of Maryland

College Park, MD

Bachelor of Science, Computer Engineering

Aug 2021 - Dec 2023

- Data Structures and Algorithms, Computer and Network Security, Operating Systems, Distributed Systems
- Dean's List, A. James Clark Scholarship

SKILLS & CERTIFICATIONS

Languages: Java, Python, TypeScript, C, SQL (PostgreSQL), Rust

Technologies: AWS (ECS, Fargate, S3, Lambda, RDS, DynamoDB, CloudWatch, CDK), Docker, Git, Linux, GitLab CI/CD, GitHub Actions, Django, Spring, REST, GraphQL

Certifications: AWS Certified Cloud Practitioner