

Ashwin John Chempolil

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EXPERIENCE

Amazon Web Services, Inc. | Arlington, VA

Software Development Engineer 2

Jul. 2024 - May 2026

- **Serverless Event Streaming:** Engineered a AWS Lambda audit pipeline streaming **3M+ daily** JournalDB (QLDB streams) events to CloudTrail across **30+ regions**, implementing SQS backpressure, dead-letter queues, and redrive mechanisms to guarantee zero data loss.
- **GenAI Security Agent:** Built the production backend for **AWS Security Agent**, including containerized ECS Fargate analysis workers, KMS-encrypted SQS fan-out, and a **single-table DynamoDB (NoSQL) events journal**.
- **Region Launch Automation:** Automated region launch **control plane** orchestration across **30+ regions** by designing **CRUD APIs** and **AWS Step Functions** workflows, eliminating **50+ engineer-hours** monthly of manual provisioning.
- **Cloud Infrastructure (IaC):** Designed and shipped **4 declarative CloudFormation resource types** that let customers model cross-account resource-sharing associations as code across **30+ regions**.
- **Fault-Tolerant Propagation:** Re-architected AWS RAM's multi-region **control plane** propagation to a single-leader topology with cross-account queue polling, isolating single-region failures across **30+ regions** with zero cascading outages over **12+ months** of chaos-tested production.
- **AI Agent:** Built an AI diagnostic agent for production log analysis using CloudWatch logs, saving **40+ engineer-hours monthly** and accelerating cross-team integration troubleshooting for **11+ engineers**.
- **Harness Engineering:** Engineered safety hooks, session memory, and review gates so **Claude Code** and **kiro-cli** run a full **plan-review-execute** in an **autonomous loop** across 5 project types, compressing **week-long projects into 1 to 2 day deliveries**.
- **IaC Constructs:** Developed a library of reusable AWS CDK constructs for **service provisioning and Route53 DNS routing**, reducing microservice onboarding time from **1 day to 1 hour** for **4+ production services**.
- **API Security:** Strengthened API security by implementing centralized middleware running **IAM** and **Identity Center** token introspection ahead of every API handler across **10 customer-facing APIs**.

Software Development Engineer

Mar. 2022 - Jul. 2024

- **Control-Plane Latency:** Architected AWS RAM's migration from full organization re-downloads to incremental updates for 5 control-plane operations, slashing update **latency from 30 minutes to 1.5 seconds** and reducing AWS Organizations data plane read load by **99.99%**.
- **Multi-Account Platform:** Scoped and architected multi-account resource sharing for **10+ resource types** across **6+ partner teams**, capturing **50,000+** new users.
- **Operational Excellence:** Maintained high availability (**99.99%**) for a foundational AWS service serving **millions of customers** by resolving **1,000+** critical incidents across complex distributed systems.

EDUCATION

Northeastern University | Boston, MA

Sep. 2019 - Dec. 2021

M.S. in Data Analytics Engineering | GPA: 3.9/4.0

TECHNICAL SKILLS

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

Frameworks & Architectures: REST, Smithy, OpenAPI, Guice, Dagger, Microservices, Distributed Systems, Service-Oriented Architecture, FastAPI, gRPC

Cloud & Compute: AWS Lambda (Serverless), AWS ECS Fargate (Containers), Docker, AWS EC2, AWS Step Functions

Data & Messaging: Amazon DynamoDB (NoSQL), Amazon SQS, AWS S3, Redis, Amazon QLDB (Ledger Database)

DevOps & CI/CD: AWS CodePipeline, AWS CodeBuild, AWS CodeDeploy, CloudFormation, AWS CDK

DevOps & Observability: CI/CD (CodePipeline/CodeBuild/CodeDeploy), CloudWatch, CloudTrail, Grafana

AI / Agentic: Amazon Bedrock, Amazon Bedrock AgentCore, Model Context Protocol, Prompt Engineering