

Srikar Challa

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SUMMARY

Software Engineer with 7+ years of experience architecting and delivering enterprise-scale AI platforms, distributed systems, and full-stack applications across Java, Python, React/TypeScript, and AWS, spanning both industry and applied research. Technical lead and primary hands-on contributor behind production GenAI/RAG platforms, AI agents, knowledge graphs, MCP infrastructure, and data systems processing millions of records, with end-to-end ownership from architecture and development through production deployment.

TECHNICAL SKILLS

- **Languages:** Java, Python, Go (Golang), JavaScript, TypeScript, SQL, HTML5, CSS3, Bash, YAML
- **Backend:** Spring Boot, FastAPI, Flask, Django, REST APIs, Microservices, Pydantic, Spring Security, Spring Data JPA, Spring Data, MongoDB
- **Frontend:** React.js, React Router, Stencil.js, Web Components, Webpack, Vite
- **AI & LLM:** RAG, LangChain, LangGraph, Amazon Bedrock, OpenAI APIs, LLM Tool Calling, AI Agents, MCP, LangSmith
- **Search & Graph:** FAISS, pgvector, BM25, RRF, Vector Search, Hybrid Search, Neo4j, Cypher, Knowledge Graphs, Ontology Modeling, Redis/HNSW, Elasticsearch
- **Data & ETL:** Apache Spark, AWS Glue, ETL Pipelines, Data Validation, Data Normalization
- **Databases:** PostgreSQL, MongoDB, DocumentDB, DynamoDB, MemoryDB/Redis, Snowflake, SQL Server, Teradata, MySQL, DuckDB
- **Cloud & Security:** AWS (S3, EKS, EC2, Lambda, SQS, SNS, Glue, Bedrock, Secrets Manager, KMS, IAM), OAuth 2.0, JWT, SSO, RBAC
- **DevOps & Testing:** Docker, Kubernetes (K8s), Helm, GitLab CI/CD, Datadog APM, SonarQube, JFrog Artifactory, JUnit, Mockito, pytest, Jest, Vitest, React Testing Library, Hypothesis/fast-check, Maven, Git, Swagger/OpenAPI, Jira

WORK EXPERIENCE

Charter Communications | Software Engineer III

(Remote) US

January 2023 - PRESENT

- Led architecture and development as a primary contributor for a multi-tenant enterprise GenAI platform powering 7+ AI assistants, building React/TypeScript experiences and Python services with RAG, LangChain/LangGraph orchestration, streaming conversations, memory, and dynamic LLM tool calling.
- Engineered hybrid retrieval pipelines across FAISS, BM25, Postgres/pgvector, and metadata search using Reciprocal Rank Fusion (RRF), with S3-synchronized indexes, vector similarity, keyword matching, and document-context reconstruction for enterprise RAG workloads.
- Led and personally implemented an ontology-driven enterprise knowledge graph using Neo4j and Cypher, modeling 7+ core entity types; architected config-driven AWS Glue/Spark ETL pipelines, data normalization and idempotent loaders, and exposed graph capabilities to LLM agents through MCP.
- Initiated, architected, and independently built a React/TypeScript and FastAPI administration platform for Kubernetes/EKS and multi-account AWS Glue operations, implementing enterprise OAuth/SSO, JWT authentication, fine-grained RBAC, automated token lifecycle management, and AI-assisted production root-cause analysis.

- Architected and led development of a governed MCP gateway integrating Jira, Neo4j, Teradata, SQL, and enterprise billing systems, with per-consumer authorization, rate limiting, Redis caching, audit logging, AWS KMS encryption, Secrets Manager, and Kubernetes deployment.
- Led development of Java 17/Spring Boot 3 services and enterprise billing/data workflows integrating Snowflake, SQL Server, Teradata, DocumentDB, and S3, including automation and data-management initiatives spanning 4.1M+ records across 141 code sets.

Amazon.com | Software Development Engineer

Bellevue, WA

July 2021 - November 2022

- Designed and developed distributed backend services using Java and AWS for Amazon Global Mile, supporting cross-border transportation and shipment-tracking workflows across international and domestic delivery networks.
- Built backend integrations enabling end-to-end shipment tracking across carrier handoffs, correlating international tracking identifiers with domestic last-mile delivery identifiers as packages transitioned into the U.S. delivery network.
- Developed event-driven and asynchronous processing workflows using Amazon SQS, implementing failure-handling and dead-letter queue (DLQ) patterns for reliable recovery and fallback processing.
- Built data-processing and retrieval workflows across 1M+ transportation and shipment records in Amazon DynamoDB, supporting backend services, operational workflows, and production troubleshooting.
- Developed an online document-management and workflow automation system using Java and AWS, reducing manual operational effort and improving reliability of Global Mile transportation workflows.

University at Buffalo | Research Assistant (Computer Vision & Applied ML)

Buffalo, NY

Jan 2021 - July 2021

- Developed an AI-powered visual interface integrating real-time facial recognition and speech interaction to identify visitors and deliver personalized event schedules.
- Collaborated with faculty and student teams to design, test, and deploy a functional prototype for on-campus use.

J-Hub (JNTUH Innovation Hub) | Software Engineer

Hyderabad, India

Jan 2018 - July 2019

- Developed a scalable Java/JavaScript/MySQL web platform supporting 40,000+ student and company registrations for large-scale event coordination.
- Built a real-time analytics dashboard to streamline event planning and operational decision-making.
- Optimized database queries and implemented secure authentication workflows, improving application performance and data protection.

EDUCATION

M.S. - Organizational Leadership, University of the Cumberland

December 2025

M.S. - Computer Science, The State University of New York at Buffalo

February 2021

M.Tech. - Computer Science, Jawaharlal Nehru Technological University

July 2019