ATHARVA AMBADE

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SKILLS

Core Languages: Java (Spring Boot), Python, Go (Golang), C++, SQL, JavaScript/TypeScript
Distributed Systems: Microservices, RESTful APIs, Apache Kafka, gRPC, Distributed Caching (Redis), CAP Theorem
Cloud & Infrastructure: Cloud Infrastructure (AWS/Azure concepts), Kubernetes, Helm Charts, Docker, Terraform, CI/CD (Jenkins, GitHub Actions)
AI & Data: LLMs (Llama 3.2), RAG (Retrieval-Augmented Generation), Vector Databases, PostgreSQL, NoSQL

EXPERIENCE

Software Engineer (Platform Team) Sept 2024 – Present
California State University *Hayward, CA*

- Designed and deployed a distributed event-streaming pipeline using **Apache Kafka** and **MySQL**, optimizing data ingestion throughput by **30%** to support real-time analytics.
- Engineered a high-performance **Retrieval-Augmented Generation (RAG)** backend for an internal AI assistant, utilizing vector indexing to improve query retrieval latency to **¡200ms**.
- Created a secure identity synchronization service using **Python**, integrating enterprise APIs to automate user provisioning and reducing manual operational toil by **90%**.
- Implemented observability standards by instrumenting microservices with **Prometheus** and **Grafana**, creating custom dashboards that reduced Mean Time to Resolution (MTTR) by **35%**.

Software Engineer (Backend & Cloud) Jan 2022 – June 2024
Accenture *Pune, India*

- Led the migration of a mission-critical banking system to a **Microservices Architecture** on Cloud Infrastructure, utilizing **Java Spring Boot** and **Docker** to reduce costs by **35%**.
- Optimized high-volume **Db2** and **SQL** database queries handling **10k+** daily transactions, utilizing advanced indexing and query tuning to decrease P99 latency by **35%**.
- Designed secure **RESTful APIs** implementing **Role-Based Access Control (RBAC)** via **Spring Security**, successfully mitigating unauthorized access vectors for sensitive financial endpoints.
- Implemented CI/CD pipelines using **Jenkins** and **Terraform**, reducing deployment lead time from 2 days to **4 hours** and enabling daily production releases with zero downtime.

PROJECTS

Distributed MCP AI Agent | ***Python, AsyncIO, Redis, LLM***

- Architected a highly concurrent **Model Context Protocol (MCP)** server capable of handling asynchronous CRUD operations across enterprise APIs.
- Solved critical race conditions in API token handling by implementing **Redlock** algorithm with **Redis** for distributed locking, ensuring data consistency.

Scalable Knowledge Graph Engine | ***Neo4j, Python, Graph Algorithms***

- Modeled a complex citation network using **Neo4j**, optimizing graph traversal algorithms (**BFS**/**DFS**) to accelerate relationship queries by **10x** compared to relational joins.
- Built a data ingestion pipeline enabling sub-second search capabilities over a dataset of thousands of unstructured documents.

Proctoring AI Microservice | ***Python, Flask, Docker, Cloud Autoscaling***

- Developed a scalable computer vision microservice for real-time monitoring, deploying it on **Kubernetes** with **Horizontal Pod Autoscaling (HPA)** to handle burst traffic spikes.
- Refactored the inference pipeline to optimize memory usage, reducing container footprint by **40%**.

EDUCATION

California State University, East Bay Expected May 2026
M.S. in Computer Science — GPA: 3.8/4.0 *Hayward, CA*

- Relevant Coursework: Distributed Systems, Advanced Algorithms, Cloud Computing, System Design

Savitribai Phule Pune University May 2021
B.E. in Computer Engineering — GPA: 3.5/4.0 *Pune, India*