Aakash Kumar
Lead Software Engineer | H-1B (4 yrs left)

aakash.kumar1980@yahoo.com
https://www.linkedin.com/in/aakash-kumar1980
https://github.com/aakashkumar1980?tab=repositories
+1 623 268 7048
15449 N 25th Ave, Phoenix, Arizona, 85023, USA

Accomplished Senior/Lead Backend Engineer specializing in cloud-native microservices with Java 21, Spring Boot, Kafka, and AWS (EKS / Kubernetes), skilled in building scalable, high-throughput applications.

Microservices and Foundational Architecture:
Led the implementation of a microservices architecture for critical financial functions, utilizing CQRS patterns to separate read/write responsibilities and significantly enhance system focus and scalability.

Event-Driven Systems:
Implemented a decoupled, event-driven architecture using Kafka, enabling asynchronous communication independent service deployments.

Distributed Transaction Management (Saga):
Implemented Saga compensation patterns to resolve data consistency challenges in multi-step, distributed transactions.

Performance and Concurrency:
Boosted throughput by over 30% and significantly reduced tail latency by migrating a high-load microservice to a reactive Vert.x framework.
Enhanced data processing efficiency using Java Streams, implementing single-pass aggregations and complex filter/map logic to improve performance for critical services.

Data & Caching:
Accelerated reads with Redis cache, persisted documents in NoSQL Couchbase; defined REST APIs with OpenAPI/Swagger for consistent contracts.

Resilience and Reliability:
Mitigated system failures and improved operational awareness by deploying resilience patterns (timeouts, retries with backoff) and creating automated failure alerts in ServiceNow.

Comprehensive Security and Compliance:
Secured applications and APIs by implementing a multi-layered defense with Okta (OIDC scopes / OAuth2), API Gateway protections (rate limits, request signing), and Vault for secrets management.

Big Data Ingestion:
Built Amazon S3, AWS Lambda, Apache Spark pipelines to ingest merchant master, redemption transactions, and authorization data.

Cloud Delivery and Automation:
Automated CI/CD on AWS EKS using GitHub Actions, integrating quality gates, progressive delivery, and centralized observability using AWS CloudWatch for reliable releases.

Work Experience

Lead Software Engineer
American Express | Phoenix, Arizona, United States

Apr 2023 - Present

As a Cloud-Native Solutions Architect and Lead, designed and developed a resilient and scalable microservices-based platform on AWS, leveraging an event-driven architecture with Kafka for decoupled communication and state management. Implemented performance-enhancing strategies like Redis caching and reactive programming with Vert.x to handle high transaction volumes. The role involved establishing robust security measures using Okta behind an API Gateway and ensuring system resilience with circuit breakers and automated failure handling. Furthermore, orchestrated big data ingestion pipelines from S3 to Spark for data processing and analytics, and managed the entire application lifecycle on Kubernetes (EKS) through a modern CI/CD pipeline.

Technology Architect
Infosys | Pune, Maharashtra, India

Aug 2016 - Apr 2023

Architected scalable software solutions, leading the design of comprehensive architectural blueprints and system diagrams. Developed responsive web interfaces using React.js and robust backends with Java and Spring Boot to enhance user experience. Implemented event-driven microservices utilizing Kafka and adhered to industry frameworks, improving system reliability and performance.

Lead Software Engineer
Trimble Mobility Solutions India Pvt. Ltd. | Pune, Maharashtra, India

Oct 2011 - Aug 2016

Designed and developed a robust system for handling large-scale streaming GPS data, utilizing JBoss Netty 3 Sockets and a JBoss Hornet Queue. The system included a Complex Event Processing (CEP) module for generating real-time alerts for events such as overspeeding, consignment dispatch, pre-delivery status, and accident-prone areas. Additionally, a batch processing module was implemented for various critical system data using the Java 5 Executors framework, and complex algorithms were developed within the SQL Server database via stored procedures.

Senior Software Engineer
BNP Paribas India Solutions Pvt. Ltd. | Chennai, Tamil Nadu, India

Apr 2009 - Oct 2011

UI development was performed using the ExtJS 3 UI Framework for a reconciliation project. This project compiled daily share market transactions. The role was as a Java Developer.

Software Engineer
Kpit Cummins Infosystsms Limited | Pune, Maharashtra, India

Dec 2006 - Dec 2008

Worked on the promotions section of the e-commerce website where based on the customer profile and season vouchers were gifted to the account.

Core Skills

CORE BACKEND & FRAMEWORKS: Java, Java Streams, Java Concurrency, REST API, Spring Boot, Spring Data, Python, Vert.X

ARCHITECTURE & PATTERN: Microservices, Event-Driven Architecture, Saga Pattern, Command Query Responsibility Segregation (CQRS), Circuit Breaker (Resilience4j), Caching, Reactive Programming, Software Solutions

DATA, MESSAGING & STORES: Kafka, Apache Spark, Redis Cache, NoSQL Couchbase

SECURITY: OAuth 2.0, OpenID Connect (OIDC), Okta (OIDC/OAuth2), HashiCorp Vault

CLOUD & PLATFORMS: Amazon Web Services (AWS), Kubernetes, Docker, AWS Lambda, AWS API Gateway, AWS EKS, AWS S3, Terraform

CI/CD & QUALITY: GitHub Actions, SonarQube, SAST/DAST Security Scanning, JUnit/Mockito

OBSERVABILITY & OPS: AWS Cloudwatch, Incident Management (ServiceNow), Performance Tuning

Education

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad   Aug 1997 - Jun 2002

Bachelor's degree Electrical, Electronics and Communications Engineering

Languages

English, **Hindi**

Certificates

Certified REST API Developer   Aug 2020
HackerRank

AWS Certified Solutions Architect Associate   Jan 2021
Amazon Web Services (AWS)