Akhila Bezawada EMAIL: bzwakhila2324@gmail.com

Backend & Cloud Developer LINKEDIN: https://www.linkedin.com/in/akhila-b-2a381b230

7+ Years Experience PHONE: +1 530 820 2789

# Professional Summary

**Application Development & Cloud Modernization**

**Backend Java Developer** with 7+ years of experience in designing, developing, and deploying enterprise-grade **event-driven microservices** using **Java, Spring Boot, Kafka, and AWS Cloud**. Skilled in architecting and integrating **RESTful APIs** across distributed systems, ensuring secure, scalable, and high-performing communication between services.

Hands-on experience in **Docker** containerized cloud deployments using **AWS EKS, Lambda, S3, and API Gateway**, delivering automated and fault-tolerant applications. Adept at writing clean, maintainable, and testable code following **SOLID principles**, applying design patterns for reusability, and implementing DevOps-driven CI/CD pipelines for faster and more reliable releases.

**Microservices Architecture & API Development**

Proficient in end-to-end backend engineering, including **REST API design**, **validation**, **exception handling**, and **integration testing**. Skilled in applying **CQRS** and **Saga (Distributed Transactional Rollback)** patterns for reliable event coordination and building resilient services with **Resilience4j**. Experienced in using **Confluent Kafka** for asynchronous messaging between microservices handling millions of transactions.

**Vert.X, Asynchronous Processing & Performance Optimization**

Hands-on expertise in **Vert.X reactive programming**, leveraging **event loops, promises, and futures** to achieve high concurrency and low latency. Built reactive microservices capable of processing thousands of lightweight events per second. Combined Vert.x Futures, **Java CompletableFuture**, and non-blocking I/O to handle parallel computations for offer ingestion, eligibility checks, and redemption tracking. Used **Resilience4j circuit breakers** and **retry logic** to ensure reliability under load and network variance.

Applied asynchronous programming models to minimize thread contention and boost performance — *achieving up to 25% improvement in offer processing throughput*.

**Data Engineering & Storage**

Experienced in integrating both **NoSQL** and relational data systems to support high-volume transactions and analytical workloads. Designed flexible schemas using **Couchbase, GCP Lumi Bigtable,** and **MySQL** for low latency reads and persistence. Implemented **Redis Caching** to store frequently accessed metadata and reduce database hits. Built data ingestion and transformation pipelines that enabled near real-time campaign and redemption analytics.

**Cloud Integration & CI/CD Automation**

Implemented containerized deployments on **AWS EKS**, and automated **CI/CD pipelines** through **GitHub Actions, XLR, and Hydra**. Integrated **AWS API Gateway** for API traffic management, throttling, and access control, along with AWS Lambda for background processing and S3 for data ingestion and archival. Utilized **CloudWatch** for observability, log management, and proactive alerting. Supported OpenShift-to-AWS migration, ensuring continuity across development, QA, and production environments.

**Security & Compliance**

Developed secure and resilient microservices using **OAuth2/OIDC (Okta)** and **AWS Secrets Manager** for token and credential management. Implemented **IAM least-privilege** policies, enforced **TLS/mTLS encryption**, and adopted defense-in-depth security aligned with enterprise standards. Integrated **API Gateway authorizers** for authentication and fine-grained access control.

**Application Performance**

Used **Apache JMeter** to test system scalability and pinpoint bottlenecks before production. Applied **VisualVM** for live JVM profiling and memory analysis, allowing precise tuning and early issue detection.

**Collaboration & Agile Delivery**

Worked collaboratively with product managers, QA, and DevOps teams in **Agile sprint cycles** to deliver features iteratively. Participated in sprint planning, backlog grooming, code reviews, and retrospectives. Proven ability to analyze complex production issues, drive long-term fixes, and improve delivery velocity through automation and proactive monitoring.

# Core Skills

Architecture & Patterns: Microservices, Event-Driven Architecture, CQRS, Saga, Resilience4j (Circuit Breaker), REST API Design

Languages & Frameworks: Java 21, Spring Boot, Spring Data, Vert.X, REST APIs, Streams API, CompletableFuture, Promises, Multithreading

Data, Messaging & Stores: Apache Kafka, Couchbase, GCP Lumi Bigtable, MySQL, Redis Cache, AWS S3

Security & Compliance: OAuth2, Okta (OIDC), AWS Secrets Manager, IAM (Least Privilege), TLS/mTLS

Application Performance: JMeter, VisualVM

Testing & Quality: Junit, Mockito, Postman

Cloud & DevOps: AWS EKS, AWS Lambda, AWS API Gateway, Docker, Kubernetes, GitHub Actions, XLR, Hydra (OpenShift), Jenkins

Observability & Operations: AWS CloudWatch, ELK Stack, X-Ray, ServiceNow

# Work Experience

#### **Software Engineer** **American Express (contract) | Phoenix, Arizona, United States** **Mar 2022 - Present**

System Design & Architecture

* Designed and architected **event-driven microservices** using **Java**, **Spring Boot**, **Vert.X**, and **Kafka (MSK)** to manage the full offer lifecycle — from campaign creation to redemption and analytics.
* Defined API specifications and contracts for **RESTful services**; implemented design patterns like **CQRS** and **Saga** for transactional consistency across distributed services.
* Applied **SOLID principles**, **domain-driven design**, and modular architecture to ensure scalability and maintainability.
* Designed data models using **CouchbaseDB**, **DynamoDB**, and **Aurora**, balancing performance and flexibility.

Development & Implementation

* Developed secure **REST APIs** with **OAuth2/OIDC (Okta)** for authentication and fine-grained access control.
* Implemented **asynchronous processing** using **Vert.X Futures**, **Java CompletableFuture**, and **Kafka Streams**, improving throughput and responsiveness.
* Created a **high-performance Impressions microservice** handling thousands of concurrent events per second.
* Built centralized **exception handling** using **@ControllerAdvice** and validation utilities with **@Valid** annotations.
* Implemented **Resilience4j** for circuit breakers, retries, and rate-limiting under variable partner loads.

Integration & Data Flow

* Integrated **AWS API Gateway** for traffic routing and throttling; secured partner communication with **Okta OAuth2**.
* Developed **AWS Lambda** functions for data transformation and backend automation.
* Implemented **Kafka-based event communication** between Offer, Enrollment, Redemption, and Reward services for real-time data propagation.
* Managed credentials and secrets securely through **AWS Secrets Manager** integrated with **Okta**.

Testing & Quality Assurance

* Built **comprehensive test suites** using **JUnit** and **Mockito**, achieving over **90% code coverage**.
* Simulated **high-volume redemption traffic** using **Apache JMeter** to benchmark API scalability and latency.
* Implemented **integration testing** pipelines ensuring consistent behavior across microservices.
* Collaborated with QA teams to validate regression and performance test results.

Deployment & Delivery

* Automated **CI/CD pipelines** using **GitHub Actions**, **XLR**, and **Hydra**, reducing deployment time by 40%.
* Deployed containerized services on **AWS EKS** and managed rollouts with zero downtime.
* Supported **OpenShift-to-AWS migration**, ensuring environmental parity and release stability.

Monitoring, Maintenance & Optimization

* Configured **AWS CloudWatch** and **ELK dashboards** for observability, metrics, and alerting.
* Integrated **CloudWatch metrics with ServiceNow** for automated incident notifications.
* Tuned JVM parameters and asynchronous thread pools, improving throughput by **25%** under peak traffic.
* Implemented proactive logging and correlation IDs for faster root-cause analysis.

#### **Full Stack Engineer** **Byteridge Software Pvt. Ltd. | Hyderabad, India Jun 2016 - Jun 2020**

System Design & Development

* Designed and developed **microservices and UI components** for healthcare analytics applications using **Spring Boot** and **Angular**.
* Built **REST APIs** for data access and synchronization with **Kafka** for event streaming.
* Used **MongoDB** for flexible data storage and implemented caching with **Redis** to enhance performance.

Testing & CI/CD

* Created automated **unit and integration tests** for critical API modules.
* Implemented **CI/CD pipelines** using **Jenkins** and **Azure DevOps**, improving delivery speed and reliability.

Collaboration & Optimization

* Worked closely with product and QA teams in **Agile sprints** to deliver incremental releases.
* Optimized backend performance with **query tuning** and API profiling, reducing response times by 15%.

# Education

#### **Bachelor’s Degree: Computer Science**

**K L University | India                         2015 - 2019**

#### **Master’s Degree: Computer Science**

**LAMAR University | USA                         2020 - 2021**