Akhila Bezawada EMAIL: bzwakhila2324@gmail.com

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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**

#### Event-Driven Microservices Platform: Developed and maintained **Spring Boot** and **Vert.X based microservices** that manage the complete offer lifecycle — from campaign creation to redemption and analytics. Designed **REST APIs** secured via **OAuth2/Okta** and integrated **Kafka producers/consumers** for asynchronous event communication across microservices. Supported targeted rewards for millions of customers in near real time.

AWS Cloud Integration: Deployed containerized workloads on **AWS EKS**, integrated **AWS API Gateway** for API routing and throttling, and implemented **Lambda** functions for backend tasks and data transformations. Used **S3** for ingestion and archival, **CloudWatch** for observability and alerts, and **Secrets Manager** for secure property management. Actively participated in migration from **OpenShift** to AWS, ensuring minimal downtime and deployment consistency.

Vert.x & Asynchronous Event Handling with Performance Optimization: Developed an **Impressions microservice** using **Vert.x** to handle high-volume, lightweight offer-view events with minimal thread blocking. Leveraged **Vert.x Promises/Futures** and **Java CompletableFuture** for non-blocking concurrent operations, improving overall API responsiveness and reducing latency under peak load. Optimized microservice throughput with **Java Streams**.

Error Handling & Validation Frameworks: Developed centralized exception handling using @**ControllerAdvice** and designed validation utilities using annotations such as **@Valid** and custom validators to ensure API reliability and standardization across services. Applied **CQRS** for command-query segregation and **Saga** pattern for distributed transaction control. Implemented **Resilience4j retry/backoff** and **circuit breaker** patterns to ensure consistent throughput under fluctuating traffic.

Testing & Quality Engineering: Designed comprehensive unit and integration tests using **JUnit** and **Mockito** to validate business logic and event consistency. Built test data pipelines to simulate high-volume redemption transactions for performance and regression testing.

Monitoring, Logging & Issue Management: Established **ELK** based dashboards and alerts for proactive system monitoring. Integrated **CloudWatch** metrics with **ServiceNow** to trigger automated incident notifications. Assisted in production troubleshooting, identifying root causes, and providing permanent fixes for recurring issues.

CI/CD & Security: Automated pipelines using **GitHub Actions**, **XLR**, and **Hydra**. Managed secrets and tokens through AWS Secrets Manager and Okta integration.

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

Built microservices and UI components for healthcare analytics applications. Designed RESTful APIs and implemented data synchronization with Kafka and MongoDB. Integrated Jenkins and Azure pipelines for deployment automation.

# Education

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

#### **Lamar University | USA 2020 - 2021**