

M Abubakar Siddique Butt

Senior Backend Software Engineer | Distributed Systems & Cloud Infrastructure

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PROFESSIONAL SUMMARY

Accomplished Senior Backend Engineer with 7+ years designing and scaling high-performance distributed systems, microservices, and cloud-native backend services on AWS and GCP. Proven expertise in storage architecture, distributed database design (including Cassandra sharding and DynamoDB access pattern optimization), event-driven systems, and fault-tolerant API development. Hands-on experience with EFS-backed storage in healthcare data workloads, Elasticsearch-based observability (ELK + APM), Kubernetes-deployed services, and CI/CD automation using Jenkins and Docker. Experienced in mentoring engineers, leading agile delivery, and collaborating cross-functionally with SREs, data engineers, and infrastructure teams.

EXPERIENCE

Sr. Software Engineer, Emumba Private Limited Oct 2023 – Present | Islamabad, Pakistan

- **Architectural Leadership:** Led backend engineering teams to design and deliver a highly available, fault-tolerant distributed system from scratch, aligning complex business requirements with scalable and resilient architecture across 10+ active production environments.
- **Go-Based SAGA Orchestration:** Designed and implemented a Go-based Orchestration Service to coordinate SAGA workflows across distributed microservices, ensuring reliable transaction management, fault-tolerant rollback handling, and data consistency in high-volume production traffic.
- **Real-Time Event-Driven Systems:** Engineered real-time event-driven microservices using Spring Boot and Apache Kafka, enabling sub-second distributed event processing and reliable message delivery pipelines across services at scale.
- **Kubernetes-Deployed Services:** All production services deployed on Kubernetes (EKS); actively interact with live clusters for log inspection, container exec debugging, port-forwarding, and runtime diagnostics to support incident triage and production readiness.
- **Secure Infrastructure:** Architected authentication and authorization infrastructure using OAuth 2.0, Keycloak, and RADIUS (AAA) protocols. Implemented secure cross-network communication via RadSec (RADIUS over TLS) and RADIUS proxy architectures, with data encryption in transit enforced across all service boundaries.
- **Database & CI/CD Operations:** Optimized high-throughput transactional PostgreSQL systems with performance tuning, indexing, and query optimization. Managed CI/CD pipelines with Jenkins and Docker across 10+ deployment environments, ensuring system stability and production readiness.
- **Team & Stakeholder Leadership:** Led agile engineering delivery in a rapid product development environment, driving code quality and release consistency. Collaborated closely with SREs and infrastructure teams, resulting in repeated client recognition for production-grade engineering excellence.

Sr. Full-Stack Engineer, Stella Technology 2022 – 2023 | Islamabad, Pakistan

- **AWS EFS & Cloud Storage Architecture:** Architected and managed AWS EFS-backed storage solutions for large-scale healthcare data workloads, ensuring high-throughput, durable, and HIPAA-compliant shared file storage across distributed services. Managed broader AWS infrastructure including EC2, Lambda, S3, and Parameter Store alongside GCP services.
- **Observability & APM:** Implemented Elasticsearch-based observability stack (ELK + APM) for centralized log aggregation, application performance monitoring, and anomaly detection across distributed healthcare services — providing end-to-end tracing and real-time operational visibility.
- **GCP Data Pipelines:** Designed and operated large-scale GCP data pipelines (Dataflow, Pub/Sub, BigQuery) to process and transform high-volume healthcare data from Health Information Exchange (HIE) systems, enabling near-real-time ingestion and analytics at enterprise scale.
- **High-Performance Microservices:** Built ultra-low-latency, memory-efficient microservices using Java (Quarkus) and GraalVM, significantly improving runtime performance, startup times, and resource utilization in distributed cloud environments.
- **Healthcare Data Integration & Privacy:** Spearheaded integration of large-scale HIE platforms using HL7 and FHIR standards (via Mirth Connect and Lyniate Rhapsody), ensuring secure interoperability and compliance with stringent healthcare data privacy and regulatory requirements.

- **Rapid Product Delivery:** Delivered complex backend features in a fast-paced product environment, rapidly translating evolving healthcare business requirements into scalable, production-ready software systems.
- **Domain-Driven Design:** Applied DDD principles and CCDA processing to model complex healthcare domains and optimize data transformation workflows and delivery patterns.

Software Engineer, **Rockville Technologies** 2021 – 2022 | Islamabad, Pakistan

- **Cassandra Sharding & Partition Strategy:** Designed and implemented a Cassandra-based distributed data layer with custom sharding and partition key strategies to support a high-speed Caller ID lookup service mapping millions of numbers in real time. Engineered partition schemes to ensure lightning-fast reads at scale, eliminating hotspots and supporting the double-number lookup requirement under production load.
- **Payment & Subscription Transaction Processing:** Redesigned a multi-tier subscription billing and payment processing platform using RabbitMQ for parallel asynchronous workflows. Implemented transaction rollback mechanisms and fault-tolerant payment retry logic, reducing billing cycle time from 24 hours to 4 hours while maintaining payment accuracy and data consistency.
- **Massive-Scale Telecom Systems:** Engineered and supported high-availability real-time distributed telecom Value-Added Services (VAS) serving millions of active users, ensuring reliability, low-latency processing, and continuous service delivery under production load.
- **Algorithmic Optimization:** Applied data structure redesign and algorithmic optimization to significantly improve processing efficiency across high-volume subscription and lookup workflows.
- **Infrastructure Modernization:** Migrated legacy telecom infrastructure to scalable Dockerized microservices using Spring Cloud, reducing latency through strategic Redis caching and optimized service communication patterns.

Java Developer (Android), **The X Solutions** 2020 – 2021 | Islamabad, Pakistan

- **Mobile Architecture:** Spearheaded migration of a legacy monolithic Android app to a modular Fragment-based architecture, reducing memory consumption by 30% and improving UI responsiveness. Designed a custom Urdu keyboard scaling dynamically across device dimensions.
- **Security & Data Integrity:** Implemented client-side OAuth protocols and device-level data protection. Built secure Android apps using Java with optimized SQLite and MySQL storage layers.

Web Developer, **Freelancer** 2018 | Islamabad, Pakistan

- **Full-Stack & Performance:** Built customer-facing web portals (GoGoRider, Cplas Solutions) with Laravel backends. Refactored legacy in-memory data loading to Redis caching, achieving 80% performance improvement. Implemented AES end-to-end encryption for secure client-server communication.

EDUCATION

BS Computer Science — PMAS Arid Agriculture University, Rawalpindi 2014 – 2018 | CGPA: 3.69 / 4.0

TECHNICAL SKILLS

Languages & Frameworks Java (Spring Boot, Quarkus, GraalVM), Go, Kotlin (familiar), Python, SQL

Distributed Databases PostgreSQL, Cassandra (sharding & partition design), DynamoDB, MySQL, MongoDB

Storage & Cloud AWS (EFS, EBS, S3, DynamoDB, EC2, Lambda, Parameter Store), GCP (Dataflow, Pub/Sub, BigQuery)

Observability Elasticsearch, ELK Stack, APM, CloudWatch, Prometheus (familiar), Grafana (familiar)

Messaging & Caching Apache Kafka, RabbitMQ, Redis, GCP Pub/Sub

Containers & K8s Docker, Kubernetes / EKS (service deployment, log inspection, runtime debugging), Jenkins

CI & DevOps CI/CD pipelines (Jenkins, GitHub Actions), Docker Compose, Infrastructure automation

Security & Auth Keycloak, OAuth 2.0, RADIUS / RadSec, AWS IAM, AES encryption, TLS

Healthcare Integration HL7, FHIR, CCDA, Mirth Connect, Lyniate Rhapsody (Certified)

Architecture & Design Microservices, SAGA pattern, DDD, event-driven architecture, sharding & partitioning, RESTful APIs, gRPC (familiar)

LANGUAGES

English — C1 (IELTS Band 7) | Urdu — Native