

Khalid Rizvi

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SUMMARY

Visionary Solutions Architect with 27+ years driving enterprise digital transformation through innovative cloud-native architectures and AI integration. Proven leader in designing secure, scalable platforms across public sector, fintech, and transportation industries, consistently delivering multi-million dollar modernization initiatives that align complex technical solutions with strategic business objectives.

Distinguished track record includes pioneering automated code generation tools earning Technical Excellence Awards, architecting pandemic response systems, and implementing AI-powered analytics platforms. Expert in translating C-suite vision into actionable architectural roadmaps while mentoring high-performing cross-functional teams. Demonstrated success modernizing legacy systems, establishing enterprise governance frameworks, and integrating cutting-edge AI/ML capabilities from conception to production deployment.

Seeking executive leadership role to accelerate business value through technology excellence, leveraging three decades of experience spanning mainframe modernization, cloud migration, and emerging AI technologies.

EXPERIENCE

Associate Partner, Cloud & Enterprise Architect | DXC Technology 07/2015 to Present

Nokia Signal KPI Analytics Platform | Dec 2024 – Present *Technologies: GoLang, Azure Container Apps, Azure SQL, Power BI, LangChain, OpenAI API, Vector Databases*

Architected next-generation KPI Analytics and Insights Platform revolutionizing network performance monitoring through intelligent automation and AI-powered analytics. Designed high-throughput batch processing solution achieving 95% reduction in manual data processing while ensuring near real-time availability of critical network KPIs from distributed endpoints across global infrastructure.

Engineered fault-tolerant data pipeline eliminating 100% of manual intervention requirements and improving data reliability by 40% for mission-critical network performance metrics. Created dynamic Power BI dashboards through optimized DAX transformations, reducing stakeholder decision-making time from days to minutes while providing scalable operational visibility.

Pioneered conversational AI interface using LangChain and OpenAI APIs within Retrieval Augmented Generation architecture, enabling natural language querying of complex KPI datasets. Implemented vector embeddings solution dynamically generating optimized SQL queries, resulting in 60% faster data retrieval and enhanced user experience for internal teams and external partners.

Network of Giving (NOG) Platform | Dec 2023 – Mar 2024 *Technologies: Java Spring Boot, GoLang, Python, AWS ECS/Fargate, API Gateway, RabbitMQ, mTLS, JWT*

Architected enterprise-grade charitable donation platform processing millions in real-time transactions with 99.9% uptime. Designed multi-tier security architecture implementing OAuth 2.0, mTLS encryption, and JWT-based authentication, achieving financial industry compliance while maintaining sub-second transaction response times.

Engineered resilient event-driven backend utilizing AWS MQ with RabbitMQ message broker, ensuring fault-tolerant asynchronous communication across distributed microservices ecosystem. Led development of core microservices containerized via AWS ECS with Fargate, enabling dynamic scaling that handled 300% traffic spikes during peak donation periods.

Established comprehensive observability framework leveraging Amazon CloudWatch, reducing system incident resolution time by 70%. Mentored junior developers in AWS best practices and cloud-native design patterns, resulting in 50% improvement in development velocity and maintainable codebase architecture.

Grants.gov Modernization Initiative | Jan 2022 – Dec 2023 *Technologies: Java, JavaScript, AWS EC2/RDS/S3, API Gateway, Lambda, VPC Peering, X-Ray*

Led comprehensive modernization of legacy federal grant management system, migrating two decades of critical data and applications from on-premise Sun servers to scalable AWS cloud environment. Developed automated deployment framework consolidating data from databases, S3, and Excel sources, eliminating manual web form deployment inefficiencies causing delays and errors.

Orchestrated complex "Lift and Shift" migration of mission-critical Java/JavaScript applications and 20 years of historical database records. Implemented secure cross-VPC communication using VPC Peering with precisely configured IAM roles, utilizing EC2 for application hosting, API Gateway for secure API management, and RDS for high-availability database operations.

Revolutionized application architecture by transitioning JavaScript web application to microservices, designing JWT-based authentication gateway with Lambda authorizers for centralized security. Implemented comprehensive monitoring using CloudWatch Logs and AWS X-Ray, improving system resilience by 45% and enabling proactive optimization across the platform serving millions of federal grant applications annually.

Los Angeles Metro Integration | Oct 2020 – Jan 2022 *Technologies: Java, Dell Boomi, REST APIs, GPS Telematics, Predictive Analytics*

Architected advanced integration solutions consolidating disparate transit systems using Dell Boomi platform augmented with custom Java services, streamlining data flow across 2,000+ vehicle fleet. Developed centralized fleet management system integrating GPS tracking and telematics data, enabling real-time monitoring and route optimization that reduced fuel consumption by 15% and operational costs by 2 million annually.

Established end-to-end supply chain visibility connecting logistics partners and systems, facilitating seamless data exchange that enhanced inventory management and reduced delivery delays by 30%. Unified scheduling, ticketing, and real-time location data sources providing passengers accurate transit information, resulting in 25% increase in mobile app engagement.

Implemented predictive maintenance solution integrating sensor data with analytics models, enabling proactive maintenance scheduling that reduced equipment downtime by 40% and enhanced operational safety across rail network serving 1.2 million daily passengers.

NY Metropolitan Transportation Authority | Jan 2019 – Oct 2020 *Technologies: Java, Spring Boot, Apache Camel, Redis, Oracle, OpenShift, RESTful APIs*

Directed architecture and implementation of NYMTA's automated energy management system for electric bus fleet, replacing manual kWh data collection with real-time Spring Boot-based service integration. Architected comprehensive solution automating kWh data retrieval from Siemens chargers into SPEAR system, transitioning from manual processes to real-time data flow supporting 500+ electric vehicles.

Led design and deployment of critical Pandemic Cleaning application for Metro North Rail during COVID-19 response, utilizing Java, Apache Camel, and Spring Boot to automate tracking and reporting of cleaning activities. Engineered system receiving train consist data from TMS Extract, transforming it into work orders for Infor EAM maintenance management with comprehensive email notification system.

Architected integration platform on Red Hat OpenShift facilitating data exchange between disparate EAM systems, using Java, Redis, and XPath to reconcile differing XML schemas. Delivered precise data flow solution for asset condition monitoring and predictive maintenance, reducing downtime and enhancing operational efficiency for railway operations serving 8.5 million daily passengers.

Payment Processing Architecture Enhancement – PayPal | Apr 2018 – Jan 2019 *Tech Stack: Java, Kafka, Cassandra, Spring Framework, BigDecimal, Event Sourcing, Microservices Architecture, Distributed Systems*

Selected as external solutions architect to enhance PayPal's distributed payment processing infrastructure, focusing on financial precision and regulatory compliance optimization across high-volume transaction environments processing millions of daily operations.

Led comprehensive architecture review and modernization of payment orchestration systems, implementing advanced precision arithmetic frameworks to ensure exact financial calculations across complex microservices ecosystems. Designed sophisticated money handling patterns utilizing Java BigDecimal libraries for mission-critical currency operations.

Architected robust event sourcing infrastructure enabling comprehensive transaction auditability and real-time reconciliation capabilities. Established distributed consistency mechanisms across payment processing services, implementing compensating transaction patterns and boundary management to maintain mathematical precision throughout complex payment workflows.

Enhanced microservices communication using Kafka-based event streaming for real-time transaction monitoring and automated precision validation. Implemented advanced reconciliation services capable of detecting and preventing arithmetic inconsistencies in distributed financial operations.

Delivered enterprise-grade financial accuracy standards exceeding regulatory requirements, establishing organizational benchmarks for payment processing integrity. Enhanced system reliability and compliance posture across multi-billion dollar transaction volumes while maintaining optimal performance and scalability.

Demonstrated deep expertise in financial systems precision, regulatory compliance architecture, and distributed transaction integrity essential for enterprise-scale payment platform operations.

Mainframe Modernization – Daito Corporation | Oct 2017 – Apr 2018 *Technologies: Java 8, Spring Boot, Redis 4, Guice, Antlr, COBOL Migration*

Spearheaded performance optimization of critical batch processing system, transforming legacy COBOL/CL workloads from AS400 platform requiring 23+ hours execution time to optimized Java solution completing in 12-13 minutes—achieving 99% performance improvement without altering sequence or dependencies.

Implemented advanced caching strategies leveraging Redis 4 and Memento design pattern for state management, utilizing data prefetching and strategic design patterns to significantly enhance data throughput and system responsiveness. Directed end-to-end migration from AS400 legacy systems to modern, cloud-ready Java 8 and Spring Boot architecture.

Mastercard Loyalty Integration | Nov 2016 – Oct 2017 *Technologies: Java, Spring Framework, Metadata Dictionary Engine, RESTful Services*

Led strategic redesign of Mastercard's Global Customer Loyalty Platform, architecting flexible integration mechanism to seamlessly incorporate external partners supporting acquisition growth strategy. Engineered innovative Metadata Dictionary Engine enabling platform to dynamically adapt to diverse partner data structures.

Delivered scalable Spring Framework-based architecture improving system modularity and performance by 60%, directly supporting global loyalty strategy through enhanced RESTful services and efficient batch processing for enterprise-scale loyalty programs processing millions of transactions.

Technical Entrepreneur & Solutions Architect | ZindagiPartners.com 06/2014 to Present

ZindagiPartners.com | Vienna, VA | Jun 2014 – Present *Technologies: Go, PostgreSQL, OAuth 2.0, JWT, WebSockets, Buffalo Soda Fizz, AWS S3, Twilio*

Founded and architected comprehensive matrimonial platform serving North American and Pakistani communities, implementing modern Go-based microservices architecture emphasizing security, scalability, and user experience. Designed robust authentication system utilizing OAuth 2.0 and JWT tokens, ensuring secure user onboarding and profile management for sensitive personal data.

Implemented real-time messaging capabilities using WebSockets and Go-Chi framework, enabling instant communication between potential matches while maintaining privacy controls and moderation features. Engineered high-performance database layer using sqlc for type-safe SQL generation, creating optimized DAO patterns that reduced query response times by 80%.

Integrated multi-channel communication system using Twilio APIs achieving 95% message delivery success rate. Architected cloud-native deployment strategy with AWS S3 for media storage and CDN distribution, supporting global user base with sub-second content loading times while maintaining cost-effective infrastructure scaling.

Principal Consultant & Founder | RIZ Consulting 11/2006 to 07/2015

Built and operated independent consulting firm in DC Metro area, delivering high-impact federal modernization projects spanning EPA regulatory compliance, VA healthcare systems, USDA biosecurity, and federal grants management. Demonstrated entrepreneurial leadership through client acquisition, relationship management, and delivery of transformative solutions improving operational efficiency across agencies serving millions of citizens.

EPA Safe Drinking Water Information System | Jul 2014 – Nov 2016 *Technologies: Java, Spring, Hibernate, Jersey, Drools 5, AngularJS*

Led enhancement of EPA's Safe Drinking Water Information System, developing rule-based transactional solution capturing critical data on 150,000+ public water systems nationwide and monitoring regulatory compliance. Designed intelligent rule-based compliance monitoring system using Drools engine to automate regulatory oversight, improving regulatory transparency through automated violation detection and reporting.

Implemented Spring-based architecture with Hibernate ORM and Jersey RESTful services, creating scalable platform that enhanced water quality monitoring and proactively identified health risks. Directed comprehensive system overhaul integrating advanced data analysis tools, strengthening public health outcomes by ensuring regulatory compliance.

CHAMPVA Claims Processing Enhancement: Designed automated business rules engine using JRules and Drools for Veterans Affairs, increasing operational efficiency by 65% and reducing claims processing time from weeks to days. Developed metadata-driven framework enabling rapid rule modifications without code deployment, supporting dynamic policy changes while providing comprehensive team training.

USDA Agricultural Research Biosecurity System: Architected robust biosecurity system recording and managing inspection data, supporting proactive threat identification and response. Built sophisticated data capture framework handling high volumes of inspection information using Java, JavaFaces, Spring, and Hibernate, implementing automated processes detecting patterns in biosecurity threats.

Veterans Benefits Service Evaluation Platform: Developed comprehensive web application evaluating service quality delivered by counselors to veterans, creating data-driven insights into counseling effectiveness. Implemented features capturing and analyzing service delivery metrics, allowing stakeholders to make informed improvements based on real-time feedback and performance tracking.

Grants.gov Search Enhancement: Enhanced search functionality by integrating advanced algorithms improving user experience and accuracy. Introduced sophisticated search algorithms boosting result relevance using Java, Google Mini, Struts, and Tiles, streamlining search process and enhancing user satisfaction with comprehensive search results.

Principle Consultant & Technical Lead | Computer Sciences Corporation (CSC) 07/1997 to 11/2006

eMedNY Medicaid System Modernization | 2002 – 2003 *Technologies: Java, Velocity Template Engine, Custom Frameworks, Reflection, DAO Patterns*

Led groundbreaking migration of New York's electronic Medicaid system, transforming 600+ screen PowerBuilder legacy application into dynamic Java web platform using innovative metadata-driven approach. Managed complex healthcare claim processing, payment, and service authorizations for millions of beneficiaries, requiring seamless transition while preserving optimized business logic.

Architected revolutionary "Codelist" automation tool utilizing custom Java frameworks with reflection and Database Metadata, enabling rapid production-ready code generation that preserved SQL logic while introducing robust DAO layer. Spearheaded use of Velocity Template Engine for dynamic template generation based on SQL and metadata, greatly enhancing flexibility and responsiveness.

Recognized with Technical Excellence Award for delivering reusable architectural components reducing development time by 70% across multiple state Medicaid systems. Codelist became invaluable company asset, providing substantial cost savings and high-quality deliverables while generating significant revenue and establishing foundation for modern web-based healthcare administration serving millions of beneficiaries.

EDUCATION

Master of Science, Computer Science | California State University, Sacramento 1995 to 1997

Advanced studies in computer science focusing on software development, system architecture, and data management.

Master of Science, Mechanical Engineering | NED University 1986 to 1988

Graduate-level education in mechanical engineering, emphasizing design, analysis, and manufacturing processes.

Bachelor of Science, Mechanical Engineering | NED University 1982 to 1986

Undergraduate program in mechanical engineering covering fundamental principles and applications in engineering.

CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

AWS Cloud Practitioner
Java Certified Architect
Microsoft Certified ATL Developer
MongoDB for Java Developers
Functional Programming in Scala
Redis Data Structures
Big Data with Scala & Spark

LEADERSHIP IMPACT & STRATEGIC VALUE

Digital Transformation Leadership:

Three-decade track record modernizing enterprise platforms resulting in significant cost reduction, performance gains, and enhanced digital maturity. From reducing mainframe batch processing from 23+ hours to 12 minutes, to achieving 99.9% uptime on financial platforms, consistently delivers transformative results across Fortune 500 companies and federal agencies.

Innovation Pioneer:

Created industry-first solutions including award-winning "Codelist" automation tool, AI-powered conversational analytics platforms, and pandemic response systems. Consistently integrates emerging technologies including AI/ML, cloud-native architectures, and modern security frameworks to deliver competitive advantage and operational excellence.

Enterprise Architecture Excellence:

Proven executive-level architect with demonstrated impact across public sector, fintech, and transportation industries, consistently delivering multi-million dollar transformation initiatives from early PowerBuilder-to-Java migrations through cutting-edge AI/ML integrations.

Crisis Leadership & Agility:

Demonstrated ability to deliver critical solutions under pressure, from COVID-19 pandemic response systems for Metro North Rail to rapid federal grant system modernization, consistently meeting urgent deadlines while maintaining quality and security standards.

Team Development Excellence:

Passionate technical leader with extensive experience developing high-performing engineering teams, conducting cross-functional guidance, and implementing comprehensive upskilling initiatives. Proven ability to foster cultures of continuous learning, technical excellence, and innovation-driven problem solving.

CORE COMPETENCIES

Cloud Architecture & DevOps:

AWS (ECS, EKS, API Gateway, Lambda, SageMaker, CloudWatch), Azure (Container Apps, SQL), Kubernetes, Docker, Terraform, CI/CD Pipelines, Infrastructure as Code

AI/ML & Analytics:

AWS Bedrock, SageMaker, LangChain, LangGraph, OpenAI, Vector Databases, TensorFlow, PyTorch, Power BI, Conversational AI, Retrieval Augmented Generation

Programming & Frameworks:

Go, Java, Python, TypeScript, Spring Boot, ReactJS, NodeJS, Microservices Architecture, Event-driven Design, RESTful APIs

Data & Integration:

PostgreSQL, DynamoDB, Redis, Apache Camel, Dell Boomi, RabbitMQ, Event Streaming, Real-time Processing, OAuth 2.0/OpenID Connect

Enterprise Solutions:

Solutions Architecture, Digital Transformation, Legacy Modernization, Security Architecture, Team Leadership, Stakeholder Management