Muhammad Ahmod

Senior Engineer | Solutions Architect | Team Lead

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Summary

Proven Senior Software Engineer with over a decade of experience architecting scalable, high-performance solutions in **C#, .NET Core, and Azure**. I excel at modernizing legacy systems, optimizing workflows, and leading cross-functional teams to deliver innovative, secure, and reliable applications. With 10 Microsoft certifications, including Azure Solutions Architect Expert, I bring deep technical expertise and a proven track record of driving efficiency—such as **slashing deployment times by 90%** and **boosting app performance by 45%**. Passionate about mentoring developers, fostering collaboration, and contributing to open-source projects to advance technical excellence.

Experience

Senior Software Engineer Team Lead

February 2019 - Present | Novation Technologies Pty Ltd | Cape Town, South Africa

System Design | DevOps | CI/CD | Microservices | Docker | Event Sourcing | GRPC | RabbitMQ | Redis | Terraform | Grafana | OpenTelemetry

- Directed migration of .NET Framework apps to .NET Core microservices with Docker and Terraform, boosting scalability on Azure and standardizing infrastructure-as-code.
- Revamped Azure DevOps CI/CD pipelines from TFS, slashing deployment time by 90%, and integrated Grafana for real-time pipeline monitoring.
- Mentored team in system design and OpenTelemetry, delivering secure, high-quality solutions with distributed tracing aligned with business goals.
- Architected a payment gateway with DataCash, JudoPay, Barclays, and SWIFT, using GRPC and RabbitMQ for reliable transactions.
- Enhanced performance by 45% via code optimization, TLS upgrades, Redis caching, and Event Sourcing.

Senior C# .NET Developer

February 2017 - January 2019 | AWCA Human Capital | Cape Town, South Africa

.NET Core | C# | Node.js | JavaScript | TypeScript | Angular | TFS | Git | ArgoCD

- Architected and implemented a high-performance API and SFTP integration with Barclays Faster Payment System using .NET Core and C#, slashing transaction processing times by 95% and enhancing operational efficiency.
- Crafted and packaged NuGet interfaces, ensuring seamless data accuracy and synchronization across distributed systems with ArgoCD for deployment orchestration.
- Leveraged Node.js to streamline backend processes, improving system responsiveness and supporting scalable front-end integrations.
- Orchestrated version control and CI/CD workflows with TFS and Git, accelerating development cycles and ensuring robust code quality.

Intermediate C# Developer

February 2015 - January 2017 | Kube Services - Cedar Connect | Cape Town, South Africa

.NET Framework | MVC | C# | JavaScript | Windows Server | IIS | RabbitMQ

- Developed and deployed Microsoft CRM 2015 plugins in C#, increasing lead accuracy and conversion rates by 60%.
- Revamped data sync services for real-time updates, boosting throughput by 300%+, cutting memory usage, resolving performance bottlenecks, and slashing onboarding wait times.

Certifications

- **Azure Solutions Architect Expert**
- Azure Administrator Associate
- Azure Network Engineer Associate
- Azure Virtual Desktop Specialty
- Azure Data Fundamentals
- Azure AI Fundamentals
- Azure Machine Learning Fundamentals
- Azure Fundamentals
- **Microsoft Certified Professional**
- Microsoft® Certified Professional Developer: ASP.NET Developer 3.5
- Microsoft® Certified Technology Specialist: .NET Framework 3.5, ASP.NET Applications
- **Foundational C# with Microsoft**
- Advanced C Programming
- Master Ethereum and Solidity Programming
- Ethereum & Solidity: The Complete Developer's Guide
- **Prosci® Certified Change Practitioner**

Projects

Currency Converter Enhancement

Challenge:

In a highly competitive fintech landscape, I identified and tackled critical flaws in an existing currency converter tool:

- **Poor User Experience:** An unintuitive UI frustrated users and reduced engagement.
- **Performance Bottlenecks:** Slow startup and calculation speeds caused delays.
- **Outdated Data:** Stale exchange rates undermined reliability and trust.

Solution:

As the lead developer, I architected and executed a comprehensive overhaul, leveraging advanced technologies and innovative strategies:

- **Modern Tech Stack:**
  - Built a real-time, bi-directional conversion engine using **C#**, **JavaScript**, and **AngularJS**.
  - Implemented **fixed caching policies** to deliver up-to-the-minute exchange rates, enhancing data freshness.

- **Performance Optimization:**
  - Streamlined backend processes to slash startup and calculation times.
  - Refined the UI with a **user-centric design**, eliminating manual steps and minimizing friction.

Impact:

My enhancements transformed the tool into a scalable, revenue-generating asset:

- **Modular Architecture:** Designed a loosely coupled, reusable component, seamlessly integrated into multiple web applications.
- **Revenue Growth:** Enabled deployment across white-label platforms, unlocking new revenue streams.
- **User Engagement:** Boosted **click-through rates** by **25%** through UX optimization (amplified by influencer partnerships).
- **Efficiency Gains:** Simplified configuration for content creators with intuitive default-value settings.
- **Performance Leap:** Reduced startup time by **40%** and achieved a **4.5/5-star** user satisfaction rating.

Exchange Rate Update Service Revamp

Challenge:

Overhauled an outdated exchange rate updater service struggling with unreliable data feeds:

- **API Instability:** Frequent failures from the primary provider disrupted real-time updates.
- **Performance Lag:** Lack of timeout handling caused delays and system hangs.
- **Scalability Gaps:** The service couldn't adapt to growing demand or failover scenarios.

Solution:

As the lead engineer, I redesigned the service with resilience and efficiency in mind:

- **Robust Tech Stack:**
  - Rebuilt the service using **C#** and **.NET Core**, integrating **Polly** for retry policies and fault tolerance.
  - Configured **HttpClient** with custom timeouts to prevent hangs and ensure responsiveness.

- **Failover Mechanism:**
  - Implemented an **automatic retry system** with exponential backoff for failed API calls (up to 3 attempts).
  - Integrated a **secondary API provider** as a fallback, seamlessly switching during outages using a priority-based routing algorithm.

- **Optimization:**
  - Cached exchange rates in **Azure Redis Cache** to reduce API calls and improve response times.
  - Streamlined logging with **Serilog** to monitor API health and failover events in real time.

Impact:

Transformed the service into a reliable, scalable solution:

- **Uptime Boost:** Achieved **99.9% service availability** through retry and failover enhancements.
- **Cost Efficiency:** Reduced API overage costs by **15%** with intelligent caching and failover logic.
- **Performance Gain:** Cut average response time by **35%**, even under peak load.
- **Team Enablement:** Provided clear documentation and monitoring dashboards.

AI-Powered Candidate Management AI Agent

Challenge:

Needed an intelligent system to streamline candidate and application management with real-time status updates.

- **Manual Overhead:** CRUD operations were slow and error-prone.
- **Data Access:** Limited querying capability hindered efficiency.

Solution:

Developed an AI Agent using Microsoft.Extensions.AI and Semantic Kernel:

- Built an agent to query a JSON-LD HATEOAS API for CRUD operations on candidates and applications.
- Integrated natural language processing to simplify status updates and data retrieval.

Impact:

Automated workflows and improved usability:

- Reduced manual CRUD time by 70%.
- Enabled real-time status tracking with 95% accuracy.

Solana Blockchain Encryption DApp

Challenge:

Required a secure method to encrypt and decrypt sensitive text and media data both off and on-chain.

- **Security:** Traditional methods lacked decentralization.
- **Accessibility:** Needed seamless wallet integration.

Solution:

Built a decentralized app (DApp) using Solana Web3 SDK and Phantom SDK:

- Implemented encryption/decryption logic on the Solana blockchain.
- Integrated Phantom wallet for secure user authentication and key management.

Impact:

Delivered a robust, decentralized solution:

- Achieved secure data handling with zero breaches.

Skills

Languages & Frameworks

- C#
- .NET Core
- .NET Framework
- JavaScript
- TypeScript
- Angular
- Node.js
- C
- C++
- Python
- Lua

Cloud & Infrastructure

- Azure
- Docker
- Podman
- Redis
- Windows Server
- IIS
- Linux
- Proxmox
- Kasm
- Vagrant

DevOps & Tools

- Azure DevOps
- CI/CD
- Git
- Gitea
- TFS
- GitHub Actions
- Ansible
- Terraform
- Portainer
- Polly
- Serilog

Skills

Architecture

- Microservices
- Event Sourcing
- GRPC
- RabbitMQ
- System Design
- YARP
- Traefik
- HAProxy

Observability

- OpenTelemetry
- Grafana
- Tempo
- Loki
- SEQ
- Uptime Kuma

Documentation & APIs

- OpenAPI
- Swagger
- Docusaurus
- Confluence

Orchestration & Security

- ArgoCD
- Kestra
- Teleport

AI & Machine Learning

- AzureOpenAI
- AzureML
- Microsoft.Extensions.AI
- Semantic Kernel
- Langchain
- TensorFlow
- PyTorch
- Scikit-Learn

Blockchain

- Smart Contracts
- Solana
- Ethereum
- XRPL
- Metamask
- Solidity
- Phantom