

# Abdul Samad Irfan

Software Engineer - Backend

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 abdul-samad-irfan —  asamad-dev — Portfolio

## Summary

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Software Engineer with 5+ years shipping backend systems in fintech and SaaS. Modernized legacy **150+ .NET services** to **.NET 8** at JPMorgan, drove **\$358K/year AWS savings** across 44 accounts at Trilogy, and builds production AI workflows with **Python** and **LLMs**.

## Technical Skills

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**Programming Languages:** C# | Python | JavaScript/TypeScript | Java

**Backend:** .NET | .NET Framework | Web API | WCF | FastAPI | microservices | distributed systems

**Database:** SQL Server | MySQL | Aurora | Redis | Cassandra | Elasticsearch

**Cloud:** AWS (EC2 | ECS | Lambda | RDS/Aurora | S3 | VPC | CloudWatch) | Azure (Entra ID | Azure DevOps)

**DevOps/ CI/CD:** Docker | Kubernetes | Terraform | TeamCity | Jenkins | CircleCI | GitHub Actions | Datadog

**Security:** OAuth 2.0 | JWT | RBAC | SSO | PingFederate | Okta | Entra ID

**Message Queues:** Apache Kafka | RabbitMQ

**AI-first Engineering:** Cursor | Windsurf | Claude Code/Claude | MCP | LangChain | Gemini | LLMs | Prompt engineering

## Experience

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### AI-First Software Engineer II - Crossover/Triology (Contract - Remote)

May 2025 - Jan 2026

- Reduced annual AWS spend by **\$358K+** across **44 accounts** and **3 regions**, by building **Python** tooling to analyze infrastructure metrics from **CloudWatch** and **Datadog** to rightsize **15 EMR clusters** (\$220K), **485 EBS volumes** (\$122K), and decommission **90 unused load balancers** with zero service disruption.
- Cut deployment errors by **60%** and onboarding time from **4 weeks to 1 week**, by standardizing **CI/CD pipelines** and deployment runbooks for **375 repositories** across 4 product lines (.NET, Node.js, Python, React) post-acquisition using **Jenkins**, **CircleCI** and **Bamboo**.
- Safely purged **74M+ documents** with **zero downtime** and zero data loss, by architecting a distributed data purge framework in **Python** across MySQL/Aurora, Cassandra, and Elasticsearch (**9 clusters**, **3 AWS regions**) using chunked execution with **S3-backed** verification.
- Accelerated production ticket resolution by building context-aware **AI agents** using **Cursor** and **Claude** to automate code review, debugging, and root-cause analysis.
- Resolved **40+ production tickets** (UI and backend) from a backlog of **300+** post-acquisition issues during weekend hackathons, shipping fixes across **4 Khoros product lines**.

### Software Developer - JPMorgan Chase & Co (Contract - Remote)

March 2023 - March 2025

- Modernized **45+ backend microservices** in the PortfolioOne buy-side trading platform from **.NET Framework 4.5.2** to **.NET 8** with zero downtime, reducing manual upgrade effort by **80%** by building migration tooling in **C#**.
- Improved API performance by **58%** by migrating **150+ WCF services** to **ASP.NET Web API** with **MessagePack** serialization and **async** patterns, using a rollback-safe multi-targeting strategy for zero-disruption incremental releases.
- Replaced WCF duplex communication with **Apache Kafka** for real-time notifications and market data feeds, enabling scalable **event-driven architecture** for high-volume institutional trading data.
- Implemented enterprise **SSO** and **RBAC** using **PingFederate** and **Azure Entra ID**, securing authentication across institutional trading services.
- Built **TeamCity CI/CD pipelines** for **multi-targeting .NET projects**, automating build, test, and regression validation across **.NET Framework** and **.NET 8** targets.

## Senior Technical Content Engineer - Educative (Lahore, Pakistan)

January 2022 - June 2023

- Created **15+ top-selling** interactive programming projects (**C#, Java, Python**) covering **OOP/OOD, Algorithms** and **Design Patterns**, adopted by thousands of learners.
- Built **Docker-based cloud labs** for **10+ technology stacks** (.NET, Django, MERN/MEAN, MongoDB) and engineered **CI/CD pipelines** using **Kubernetes** and DigitalOcean for automated repo checkout, image builds, and lab deployments.
- Designed hands-on labs for FAANG interview preparation covering **Kafka** streaming, **REST APIs**, authentication/authorization, and **e-commerce microservices** in **C#, Java**, and **Python**.

## Engineer - Tricon Boston Consulting Corporation Pvt. Ltd. (Jhimpir, Pakistan)

December 2020 - January 2022

- Reduced wind turbine downtime across **120 turbines** by building predictive maintenance models in **MATLAB** and **Python** for early fault detection and maintenance scheduling.
- Optimized electricity generation by analyzing vortex generator impact using historical and predictive wind data models.
- Built a real-time monitoring dashboard in **.NET** and **JavaScript** providing live generation updates for **government oversight**, enabling data-driven operational decisions.

## Projects

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### AI-assisted Bank Reconciliation

2025

- Engineered an AI-assisted bank reconciliation tool for a bookkeeping firm serving trucking clients, ingesting PDF statements from multiple banks, extracting transactions using OCR, and exporting categorized CSV/Excel outputs.
- Implemented transaction categorization using **Gemini (LangChain)** with **Pinecone** vector search (HuggingFace embeddings), supporting client-specific General Ledger/Charts Of Accounts context.
- Delivered a full workflow (**FastAPI + React UI**) with async batching/concurrency limits, structured logging, health endpoint, and CSV-safe sanitization.
- Deployed on **AWS** using **Docker** (pre-downloaded embedding model to reduce cold starts), NGINX reverse proxy (CORS + long PDF timeouts), CloudWatch logging (**awslogs**), and **GitHub Actions** CI/CD with runbooks.

### IFTA DriverPacket

2025

- Developed an AI-powered pipeline to convert driver packet images and route CSVs into structured trip data and state-by-state mileage using **Gemini** OCR, **HERE** routing/geocoding, and GIS-based analysis.
- Implemented a **FastAPI** backend for miles calculation, driver-packet processing, PCS trip processing, and jurisdiction-ready IFTA exports (e.g., CA CDTFA-5235, TX X12 813) with **AWS S3** uploads and pre-signed download URLs.
- Productionized delivery with **Docker**, GitHub Actions CI (tests/lint/security), and automated deployment to EC2.

## Education

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### University of Engineering and Technology Lahore

B.Sc., Electrical Engineering (3.5/4.0 CGPA) — 2016 - 2020