Muhammad Saeed Nawaz

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Principal Engineer

Highly analytical Data Architect & Engineering Leader with a strong background in mentoring engineering teams to build cloud-native/in-house ETL pipelines using KVM environments, real-time data platforms, and AI/ML solutions for major US clients like AT&T, Comcast, Verizon, Caesars, TrueGreen, Altice, FC, T-Mobile, and Virgin Media (UK). 8+ years of experience with a multinational data & AI company, Afiniti, delivering a multi-zone GDPR and PII-compliant data platform with encrypted storage, role-based access (IAM), and metadata management. Proven success in improving data reliability and predictive models accuracy (up to 40%) to optimize data pipelines, pairing accuracy, and customer targeting, ultimately leading to enhanced campaigns' conversion rates and operational efficiency for telecom clients with large-scale contact center operations in the US and UK.

Areas of Expertise

- Hybrid Data Architecture
- ETL Pipelines Development
- Big Data Processing
- AI/ML Solutions
- Cloud Platforms-AWS

- Data Governance & Compliance (GDPR, PII handling, CCPA)
- Distributed Computing (Spark)
- AI Model Improvement
- Data Modeling & Feature Engineering

- Agile Project Management
- Legacy Systems Migration
- Monitoring & Automated Alerts
- Stakeholder Engagement
- Team Building & Leadership

Career Experience

Afiniti Software Solutions (Pvt) Limited   **August 2017 – June 2025**

Senior Manager (Data Engineering & CDS) (October 2021 – June 2025)

Provided strategic leadership to design, architect, and operate a secure, scalable multi-zone data platform with high-throughput ingestion, self-service dev environments, and automated governance (80% fewer data incidents Y/Y), and delivering near real-time analytics (70% faster nightly loads).

- Delivered $5M+ in additional annual revenue by leading the development of high-impact data features using portability data for the US, as part of Afiniti's Third Party Data team.
- Achieved full compliance with US and international data privacy regulations, maintaining 99.95% uptime by deploying a dual-zone architecture (US & Non-US) with MongoDB, MySQL, Airflow schedulers, and Kafka clusters and reducing pipeline incident resolution time <15 minutes.
- Reduced data onboarding time by 80%, and transitioned architecture to a scalable, auto-healing platform amid client integration surges.
- Replaced a legacy monolithic server with a modern, scalable infrastructure by deploying dedicated VMware virtual machines running CentOS as the base OS; architected and deployed a robust data engineering stack (Jupyter Notebook, Apache Airflow, tuning of Airflow's LocalExecutor, CI/CD pipelines, Grafana dashboards integrated with InfluxDB, and a scalable uWSGI server running on Flask).
- Established a lightweight Python QPS-control framework to parallelize batch jobs into MongoDB/ MySQL—now running on both zones, handling retries, back-pressure, and scaling to 5x the original throughput without manual intervention.
- Drove quarterly key rotations and successful ISO 27001 audits by engineering one-click PII discovery and removal, applying Vormetric encryption at rest (databases, dev-boxes, notebooks), and configuring daily, cross-region, point-in-time restores to encrypted S3.
- Integrated data quality checks with real-time monitoring using Prometheus and Grafana, maintaining a failure rate under 5% through proactive anomaly triage, on-demand PII scrubbing, and rapid data recovery.

Principal Software Engineer (DATAX) (February 2019 – September 2021)

Spearheaded a high-performance team of junior engineers to migrate legacy cron jobs to Airflow, build robust data pipelines and connectors, and implement testing and CI foundations, boosting data reliability, and model accuracy.

- Reduced pipeline failure rates by 25%, eliminated silent job failures, and improved reliability by leading migration to Apache Airflow, centralizing workflows, and enhancing monitoring for DATAX's data engineering processes.
- Improved predictive model accuracy by 40% through designing star and snowflake schemas in MySQL and MongoDB, enhancing data pipelines, reducing bug rates by 30%, and accelerating onboarding efficiency.

- Introduced unit testing with Pytest, peer code reviews, and Jenkins-based CI for Airflow DAGs, adding basic data-quality checks (row counts and schema validation) to catch errors early.

Senior Software Engineer (Data Strategy & Acquisition) (April 2018 to February 2019)

Led gaps identification in CRM and customer data, particularly for clients with limited internal datasets, as a part of Afiniti's newly formed Data Strategy & Acquisition team, collaborating closely with AI and ETL teams to improve data-driven pairing strategies.

- Boosted AI model performance by enriching client datasets through strategic data gap analysis and third-party data integration, enhancing conversion rates and operational efficiency for telecom and BPO clients in the US and UK.
- Enhanced pairing accuracy & customer targeting by integrating broadband and cellular data into models, enabling clients (Virgin Media) to improve AI-driven operations with enriched geographic service data.
- Managed a project to ingest and structure mobile network coverage data from RootMetrics (US), helping Afiniti enhance pairing decisions for telecom clients by identifying regions with 5G or advanced network availability.
- Partnered with data scientists and client delivery teams to validate the usefulness of acquired datasets, define feature requirements, and feed enriched data into production pipelines.

Software Engineer (Data Strategy & Acquisition) (August 2017 to April 2018)

Engaged in developing Python-based automation scripts to accelerate data extraction, transformation, and loading processes and maintain data integrity and consistency through rigorous validation and testing, laying the groundwork for Afiniti's advanced data infrastructure.

- Enhanced operational efficiency by automating ETL processes, reducing manual errors, and improving data reliability, significantly boosting Afiniti's AI model performance and team productivity during the scaling phase of data infrastructure.

PCS International (Pvt) Ltd   **January 2017 – July 2017**

Senior Software Engineer

Instrumental in driving the seamless migration of Delta Force Paintball UK's outdated Drupal site to WordPress, enhancing user experience and maintainability.

Super Technologies (Pvt) Ltd   **March 2014 – December 2016**

Senior Software Engineer

Oversaw development and maintenance of scalable PHP/MySQL systems for high-volume billing and payment processing, including integrating XML-based APIs and PayPal Checkout to support secure, streamlined transactions. Resolved API and system performance issues.

- Drove the company's first cloud migration, shifting infrastructure from SoftLayer to DigitalOcean, cutting SIP server costs by 50% and improving deployment speed.
- Self-initiated and deployed AWS solutions (EC2, S3, RDS) to host web applications to boost system reliability and scalability.
- Installed and configured Asterisk VoIP servers, integrated with FreePBX and A2Billing in real-time to streamline SIP management and billing workflows.

Education & Credentials

BS-CS – Software Engineering: Preston University, Karachi (Mosadaqa Certified)

Professional Certifications
Certified by micro1, successfully passed micro1's AI Interview and officially certified as a Program Architect (Data Engineering & CDS)
Certified by HackerRank, successfully passed HackerRank's Skill Certification Test and officially certified in Problem Solving
Credential ID: 22F2B2A72C5D

Professional Development
Data Summit – Afiniti | Los Angeles, CA, 2019

IT Skills/Platforms
Cloud Platforms: AWS (S3, Redshift, Glue, EMR, SageMaker), GCP (BigQuery, Dataflow, Pub/Sub)
Streaming & Big Data: Apache Kafka, Spark Streaming, Flink, Hadoop
Data Engineering: Python, Scala, SQL, MongoDB, Airflow, Docker, Kubernetes
MLOps & AI: MLflow, Kubeflow, SageMaker Pipelines, Great Expectations (Data Quality)
DevOps & IaC: Terraform, CloudFormation, Jenkins, GitHub Actions
Visualization & BI: Tableau, Power BI, Apache Superset