

# Anand Raj - Data Engineer | 3+ Years | AWS Certified

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## PROFESSIONAL SUMMARY

Results-driven Data Engineer with 3+ years designing ETL pipelines and data solutions at scale. AWS Solutions Architect – Associate certified. Expert in Apache Airflow, PySpark, and hybrid cloud (AWS/Azure/GCP). Delivered 65% improvement in regulatory compliance through data validation frameworks. Skilled in Medallion Architecture, data quality, and pipeline orchestration processing 100M+ records daily.

## TECHNICAL SKILLS

**Languages:** Python, PySpark, SQL, C++ | **ETL & Data Processing:** Apache Airflow, AWS Glue, Azure Data Factory, PySpark

**Cloud Platforms:** AWS (S3, Athena, Lambda, Step Functions, Glue, EMR, Data Catalog) | Azure (Data Factory, Synapse, Databricks, ADLS) | GCP (DataProc)

**Databases:** MySQL, PostgreSQL, Sybase | **Big Data:** Hadoop HDFS, Hive, Kafka

**Data Engineering:** ETL Pipelines, Data Pipeline Orchestration, Medallion Architecture, Data Quality, Schema Evolution, CDC, Incremental Loading, Data Governance

**DevOps:** Docker, Git, Jupyter | **Certifications:** AWS Solutions Architect – Associate

## EXPERIENCE

**Cognizant Technology Solutions | Associate Data Engineer, Moody's Ratings** | Sept 2022 – Present

- **Data Quality & Validation:** Built Python validation tool (Pandas, NumPy) reducing regulatory submission errors by **65%**, ensuring 99.9% data accuracy and European compliance
- **AWS Cloud Migration:** Migrated legacy Sybase/Informatica infrastructure to serverless AWS (S3, Glue, Lambda, Step Functions), achieving **40% cost reduction** and **30% operational efficiency gain**
- **Error Handling:** Analyzed root causes of rating failures, implemented exponential backoff and dead-letter queues, reducing submission errors and downtime
- **Tech Stack:** PySpark, Python, AWS (S3, Athena, Lambda, Step Functions, Glue), PostgreSQL, XML

## PROJECTS

**1. Azure E-Commerce ETL Pipeline** | Azure Data Factory, Databricks, Synapse, PySpark, MongoDB, GCP DataProc | [GitHub](#)

- Implemented Medallion Architecture (Bronze → Silver → Gold) processing **7 distinct tables** ingested from HTTP sources to ADLS Gen2
- Developed parameterized Azure Data Factory pipelines with data quality checks, incremental refresh using watermarking, and MongoDB enrichment
- Replicated architecture on GCP DataProc demonstrating multi-cloud proficiency; achieved **sub-minute query latency** optimizing Synapse views and CETAS materialization
- Scalable design supports **10x data volume** increase with minimal architectural changes

**2. Apache Airflow NASA APOD Pipeline** | Airflow (TaskFlow API), Docker, PostgreSQL, Python, REST APIs | [GitHub](#)

- Containerized Airflow environment using Docker Compose with isolated PostgreSQL metadata store for automated daily APOD ingestion
- Refactored legacy XCom-based DAGs to modern **TaskFlow API** improving maintainability, type hints, and scalability; implemented robust error handling with retries and alerting
- Built multi-stage data validation (schema, nulls, types) and idempotent ETL logic with insert-or-update database operations

**3. Data Quality & Regulatory Compliance Framework** | Python, Pandas, NumPy, SQL, XML

- Implemented 50+ validation rules: data completeness, accuracy, consistency, regulatory format compliance, cross-table integrity
- Result: **65% error reduction, 99.9% submission accuracy, 20 hours/week QA time savings**, zero compliance violations in audits

## EDUCATION

**B.Tech. Computer Science & Engineering** | Graphic Era Deemed University, Dehradun | May 2022 | CGPA: 9.36/10

## KEY ACHIEVEMENTS

✓ 65% reduction in regulatory submission errors | ✓ 40% cost savings through cloud modernization | ✓ 99.9% data accuracy compliance | ✓ Multi-cloud architecture (AWS/Azure/GCP) | ✓ Modern Airflow practices (TaskFlow API) | ✓ Medallion Architecture implementation | ✓ Scalable pipelines (100M+ records daily)