

Akhil Reddy Patlolla

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Profile

Senior Data Engineer with expertise in conceptualizing, constructing, and enhancing data pipelines and architectures. Proficient in big data and analytics, distributed computing, data warehousing, and ETL processes. Demonstrated success in leveraging cloud platforms such as AWS, Azure, and GCP to tackle complex data engineering challenges and deliver actionable insights to stakeholders. Successful in building architecture to expand data security, access, and scalability.

Core Competencies

Data Engineering # BI Reporting Elevation # IAC & CI/CD # Data Architecture # Automation & Scaling
Technical Advising # Migration & Integration # Machine Learning (ML) # System Design # Data Modeling
ETL development # Cloud platforms

Work Experience

Senior Data Engineer Avathon, Inc.

📅 02/2025 – present 📍 AUSTIN, TX, UNITED STATES

- Built a unified data platform supporting diverse industrial data connectors to centralize and standardize data access
- Implemented Apache Iceberg for scalable, governed, and time-aware data storage
- Enabled config-driven ingestion to reduce onboarding time and support rapid analytics and AI use cases
- Aligned data solutions with business goals like predictive maintenance and operational efficiency
- Led and mentored the data team, driving consistency, reusability, and technical excellence

AWS Cloud Solution Engineer IV Charter Communications(Spectrum)

📅 10/2024 – 02/2025 📍 ST. LOUIS, UNITED STATES

- Collaborated with cross-functional teams to define dimensional data models for large datasets in **AWS Redshift**.
- Ensured high data quality and consistency by defining proper **data relationships** and establishing best practices for **ETL pipelines**.
- Designed and implemented **data models** using **fact** and **dimension tables** to optimize analytics workflows
- Developed scalable **Star and Snowflake** schemas to improve data organization and query performance in a distributed data warehouse environment
- Created and maintained **stored procedures** on **AWS Redshift** to handle complex ETL processes, including data transformations, aggregations, and incremental loads
- Implemented historical data capture and load strategies to maintain a complete and consistent data history for analysis and reporting

Senior Data Engineer Aspen Capital ML LLC

📅 06/2022 – 05/2024 📍 PORTLAND, UNITED STATES

- Led platform operations managing \$1.7B in assets, driving end-to-end on-prem to **AWS cloud migration** with focus on scalable, reliable, and **cost-effective architecture**
- Designed and optimized **Redshift** data solutions, including star/snowflake schemas, dist/sort keys, compression, partitioning, and workload management for performance and efficiency
- Managed **Redshift** clusters, automating backups, resizing, vacuuming, and performance monitoring to ensure high availability and optimal resource usage
- Spearheaded **AWS lakehouse** adoption, building an **"Icehouse"** layer on **Airflow (MWAA), Glue, DMS, Kafka,**

Work Experience

- **PySpark**, and **SQL** to modernize data processing and analytics
- Migrated pipelines from legacy systems using **IAC** frameworks like **CDK (Python/TypeScript)** and **Pulumi (TypeScript)**, ensuring reproducible and scalable infrastructure
- Enforced data security practices including encryption, masking, and RBA across **Redshift** and **S3** environments
- Mentored a cross-functional team of 5, including data, **BI**, and software engineers, driving growth and delivery in the **AWS ecosystem**
- Delivered 8 seamless third-party SaaS integrations (e.g., Salesforce, TMO, Import.io, Boomi, Sage Intacct), enhancing data accessibility and business intelligence quality

Data Engineer Amazon Web Services

📅 02/2021 – 05/2022 📍 NEW YORK, UNITED STATES

- Designed a scalable **NoSQL** datastore (**DynamoDB**) to enable real-time reporting and backend analysis
- Built pipelines using **AWS DMS**, **EventBridge**, and **Lambda** to support both streaming and batch processing
- Designed **DynamoDB** datastore data model to resolve out of order events and synchronous event processing on Lambda; remodeled systems reduced latency of data pipeline by 25%, providing a higher quality customer experience
- Cut data recovery time from 3 days to hours using **DLQ-SQS** workflows and **AWS Glue** reprocessing
- Developed **ETL** processes to ingest **incremental** data into **Redshift** for advanced reporting

Big Data Engineer Madison Logic

📅 07/2018 – 01/2021 📍 NEW YORK, UNITED STATES

- Built and optimized ETL pipelines on AWS Glue using PySpark, integrating with Airflow for automated reporting and alerting
- Implemented jobs using **Apache Airflow** and Parquet DLT based on trigger ensuring continuous reporting, monitoring, and alerting with fail-safe methods to handle errors and conditional retry
- Designed BI dashboards and compiled business reports to support data-driven decision-making by executive leaders
- Developed **BI dashboards** and **OLAP** cubes to support executive decision-making and audience forecasting
- Improved **Snowflake** query performance by 60% through **tuning** and **optimization**
- Built a flexible **ETL** utility on **AWS Glue** for **MySQL**, **Redshift**, **Oracle**, **SQL Server**, and **PostgreSQL**; optimized performance by migrating to **Delta Lake**

Skills

- **Programming/Scripting Languages:** TypeScript | JavaScript | Python
- **Frameworks & Technologies:** CDK (TypeScript/Python) | Terraform | Pulumi | Node.js | Apache Airflow | Retrieval-Augmented Generation (RAG) | LangChain | Vector Databases (Pinecone, FAISS)
- **Data Modeling:** Fact & Dimension Tables | Star Schema | Snowflake Schema | Data Vault
- **Databases & Warehousing:** Amazon Athena | MySQL | PostgreSQL | DynamoDB | DocumentDB | Amazon Redshift | Snowflake | Amazon RDS | AWS Glue Data Catalog
- **Big Data & Streaming:** Apache Spark | AWS Glue | Databricks | Kinesis Data Streams | DynamoDB Streams | EMR
- **AWS Services:** Lambda | ECS/EKS | S3 | Database Migration Service (DMS) | AWS Transfer Family | DataSync | VPC | Macie | API Gateway | SageMaker | Comprehend | Textract | OpenSearch | AWS Lake Formation | Kinesis Firehose | SQS | Step Functions | SNS | EventBridge
- **AI & ML Enablement:** Retrieval-Augmented Generation (RAG) Pipelines | Embedding Generation | Text Vectorization | Document Indexing | Question Answering over Documents | LLM Integration (OpenAI, Bedrock)
- **Business Intelligence & Visualization:** Domo | Tableau | Amazon QuickSight | Power BI

Education

Computer Science | Masters of Science Northern Illinois University

📍 DEKALB, UNITED STATES

Information Technology | Bachelor of Technology Jawaharlal Nehru Technology University

📍 HYDERABAD, INDIA