

Madhupriya Allam

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SUMMARY

Data Analyst with 3+ years across **regulatory data engineering**, **SQL** development, and **reconciliation** at **Barclays** and **Zemoso Technologies**, now building toward **Data Engineering** and **Agentic AI** roles. Ships production-grade personal projects end-to-end, from a 17-table **Supabase** backend to an **LLM-safety-validated NL-to-SQL** engine, every claim backed by passing test suites, not just working demos.

SKILLS

Data Engineering: SQL, Python (Pandas), PySpark, ETL Pipeline Design, Data Warehousing, Snowflake, PostgreSQL, Supabase, Oracle

Analytics & BI: Data Reconciliation, Data Profiling, Data Validation, Power BI (DAX), Tableau, Streamlit

AI & Full-Stack: LLM/RAG, Natural Language-to-SQL, FastAPI, React, TypeScript, Row-Level Security

Governance & Regulatory: CCAR, FR Y-14Q, BCBS 239, Data Lineage, Audit Readiness

Tools: Git/GitHub, Jira, Agile Methodologies

EXPERIENCE

Barclays

Sep 2024 - Present

Data Analyst

Whippany, NJ

- Automated recurring **data validation** checks using **Python** and **SQL** to cross-verify source-to-target data integrity, reducing manual QA time on **regulatory deliverables** by 70%
- Built and maintained **ETL pipelines** and **Snowflake** reporting views consolidating **financial data** from multiple source systems for **regulatory reporting** and business analysis
- Reconciled **CCAR regulatory datasets** using complex **SQL** (joins, CTEs, window functions), resolving 25-50 discrepancies per quarterly cycle, with **data lineage documentation** supporting **audit readiness** for CCAR and FR Y-14Q submissions
- Partnered with **source-system owners** to root-cause **data discrepancies** at their origin, feeding fixes back upstream rather than patching them downstream in reporting layers
- Built **Power BI (DAX)** dashboards surfacing **regulatory reconciliation** status and trends for stakeholder reporting

University of North Texas

Jan 2023 - Jul 2023

Graduate Teaching Assistant, Big Data

- Co-taught a graduate-level **Big Data** course covering **distributed processing** (Hadoop, Spark), **SQL optimization**, and led lab sessions for 40+ graduate students on **SQL/Python** assignments

Zemoso Technologies

Dec 2021 - Nov 2022

SQL Developer

Hyderabad, Telangana

- Wrote and optimized complex **SQL queries**, **stored procedures**, and views to support application data needs and reporting dashboards, improving query performance by 40%+
- Performed end-to-end **ETL** for downstream **analytics systems**, ensuring accurate and timely data delivery for **business reporting**
- Collaborated with cross-functional **development** and **business** teams to gather requirements, translating them into efficient **database schemas**
- Documented **query logic** and **schema design** decisions to support maintainability and onboarding for the data engineering team

PROJECTS

Madli: AI-Powered Discovery App | *in active development* | [GitHub](#)

- Designed an **AI-driven pairwise ranking algorithm** that builds personalized recommendation lists from real user comparisons rather than star averages
- Built a 17-table **PostgreSQL/Supabase** backend with **Row-Level Security** enforced on every table and a 28-component **React 19 + TypeScript** design system, with test coverage spanning Vitest and Playwright

Agentic Natural Language-to-SQL Analytics Engine | [GitHub](#)

- Built a multi-step **natural language-to-SQL** system with **RAG-based schema grounding** and a **FastAPI** backend, generating safe, executable **SQL queries** against **Snowflake** databases
- Implemented a whitelist-based safety validator blocking non-SELECT statements, verified with 215 passing automated tests

Regulatory Reporting Automation Tool | [GitHub](#)

- Built a full-stack CCAR/FR Y-14Q reconciliation tool across three synthetic source systems, validated against 14 planted **data breaks** with 60 passing automated tests, delivered via interactive **Streamlit** dashboards

CERTIFICATIONS

Certified ScrumMaster (CSM) | AWS Certified Cloud Practitioner | AWS Certified AI Practitioner (AI/ML)

EDUCATION

University of North Texas

Jan 2023 - May 2024

Master of Science, Computer Science

Denton, TX

- Coursework:** Database Systems, Big Data & Data Science, Data Analytics, Algorithms, Artificial Intelligence