ALI ZAMAN

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EDUCATION

NUML University, Islamabad, Pakistan

Bachelor of Science in Software Engineering | 5th Semester | CGPA: 3.70

TECHNICAL SKILLS

Languages & Frameworks: Python (Polars, Psycopg2, DuckDB), FastAPI, SQL
Databases & Cloud: PostgreSQL (Neon, Azure), Azure Data Lake Storage Gen2, Azure Virtual Machines
Architecture & Data: Medallion Architecture, Apache Iceberg, Apache Airflow, Star Schema, ETL Pipelines, REST APIs
DevOps & Tools: Docker, Git, GitHub Actions

PROJECTS

Prop-I (Property Intelligence Platform) March 2026 – Present

- Engineered a full Medallion Architecture lakehouse (Bronze → Silver → Gold) on Azure Data Lake Storage Gen2, backed by a RAM-buffered, bulk-flush lineage tracker in PostgreSQL that cut database round-trips by over 99% while keeping memory usage flat regardless of dataset size.
- Implemented Bronze→Silver transformations in DuckDB — geo-fencing, unit normalization, price capping, and SCD2 versioning — to produce analysis-ready property data.
- Orchestrated the pipeline end-to-end with a Dockerized Apache Airflow deployment on an Azure VM, resolving a critical dependency conflict between Airflow's core runtime and PyIceberg by isolating the Gold task via subprocess execution.
- Delivered the Gold layer with SCD Type 2 historical tracking on Apache Iceberg via a JDBC-backed catalog in Azure PostgreSQL, and built a custom interactive dashboard for validating property-level price history over time.
- Github: https://github.com/ali786-hub/Property-Intelligence-Platform

MeteoSync (Cloud-Native Climate Telemetry Platform) May 2026 – July 2026

- Architected a production-grade ETL pipeline and 3-table Star Schema on PostgreSQL, isolating user authentication from telemetry metrics for enhanced security.
- Engineered high-performance bulk data ingestion using Python and psycopg2.extras.execute_values with idempotent upsert operations to safely process hourly weather API data.
- Deployed a decoupled cloud architecture featuring a FastAPI backend with thread-safe connection pooling, automated daily GitHub Actions cron jobs, and cloud hosting via Azure, Render, and Vercel.

Website Link : https://meteo-sync.vercel.app/analytics.html Github : https://github.com/ali786-hub/MeteoSync

EXPERIENCE:

Post-Quantum Cryptography Research — Incubated at NUML BICON, Islamabad, Pakistan Incubatee | June 2026 – Present

- Secured a competitive workspace at BICON by proposing a research track on post-quantum cryptographic integration for data architectures.
- Studying the evolution of asymmetric cryptography — RSA to lattice-based schemes such as

ML-KEM — toward a custom cryptographic wrapper for backend systems..

CERTIFICATES & COURSES

Docker Foundations Professional Certificate – LinkedIn Learning

Python Programming for Data Science – Coursera