

Noor Rehman

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EDUCATION

BS Data Science | *Air University, Islamabad* Sep 2023 – Jun 2027
3.82 / 4.0 CGPA • High Achiever (5x) • Mentored 4 juniors in their DBMS Project

HSSC, Computer Science, 85.4% | *Punjab Group of Colleges (Cantt Campus), Rawalpindi* Nov 2021 – Aug 2023

EXPERIENCE

Freelance ML & AI Developer | *Independent, Clients under NDA* 2024 – Present

- Translated **dynamical systems models** into code, running **simulations** and experimental validation for independent research.
- Built an ensemble **gold-price forecaster** (custom PyTorch transformer, XGBoost, LSTM) with automated **BUY/SELL/HOLD signals** and **Reddit sentiment analysis**; full-stack, in-house models, zero external LLM dependency.

Full Stack AI Developer Intern | *Noble Platforms, Islamabad* Sep – Dec 2025

- Core contributor to **The Noble Islam**, a live multilingual AI-powered Islamic knowledge app (Quran/Hadith Q&A, English + Urdu) shipped on Google Play; built the AI chatbot using **LLM-based retrieval (RAG)** over verified religious sources, including **multimodal verification** of image, video, and audio content.
- Built end-to-end **data acquisition** and **backend systems** (Selenium, BeautifulSoup, Playwright, Node.js, Next.js, Python) — sourcing and structuring Quran/Hadith reference content and powering real-time chatbot interactions in production.

Data Science & ML Engineer Intern | *Pakistan Bureau of Statistics, Islamabad* Jul – Aug 2025

- Automated the national **data-cleaning pipeline** (imputation, conditional logic, ML-based outlier detection), slashing processing time **from hours to under 10 minutes** (>90% reduction); deployed live **Dash** and **Power BI dashboards** with real-time **PostgreSQL connectivity**, surfacing national KPIs to government decision-makers.
- Presented** the system and conducted **two workshops** on the **data-cleaning system** at **DataFest 2025**, demonstrating real-world deployment and stakeholder training.

PROJECTS

VoltaIQ: End-to-End Consumer Outage Prediction Platform Apr – May 2026

GradientBoosting · FastAPI · Next.js · ETL · PostgreSQL · Render

- Built full-stack outage prediction platform forecasting **outage windows hours in advance**, enabling informed household planning.
- Achieved **CV $R^2 = 0.921$, MAE = 0.48 hrs, tier accuracy 100%**; complete pipeline from **weather ingestion** to **ETL** to **FastAPI** to **Next.js** operator/customer dashboard, deployed end-to-end.

ODE-Informed Parkinson's Progression Modelling (OIFA) Feb – Mar 2026

XGBoost · SHAP TreeExplainer · Per-patient logistic ODEs · 5,875 voice recordings (42 patients)

- Novel framework encoding **per-patient ODE trajectories** as ML features; early-window **$R^2 = 0.848$, MAE = 2.36 UPDRS pts** vs. voice-only $R^2 = -0.448$; identified **5 PD phenotypes** (Jaccard = 0.952).

Site Energy Use Intensity (EUI) Forecasting Sep – Dec 2025

CatBoost · SHAP/TreeExplainer · OOF Validation · WiDS 2022 Dataset

- Engineered **climate-sensitive thermal stress features** and physics-inspired corrections atop **CatBoost**; paper accepted at **IEEE iCoMET 2026**, withdrawn pre-presentation due to travel constraints.

Sentiment-Driven AI Melody Generator Feb – Jun 2025

VADER NLP · Bayesian Networks · Fuzzy Logic · Markov Chains · Streamlit

- End-to-end **NLP-to-audio pipeline** generating MIDI melodies from text sentiment in **8–10 seconds**; **90% user satisfaction**; deployed live on **Streamlit**.

SKILLS

ML & AI: Scikit-learn, XGBoost, CatBoost, TensorFlow, PyTorch, NLP, Hugging Face, LLMs (RAG, Prompt Engineering), Explainable AI (XAI: SHAP, LIME), Hyperparameter Tuning, MLflow, YOLO, OpenCV, Pillow, Roboflow, CVAT

Data Science: Statistical Modeling, Time-Series Forecasting, EDA, Feature Engineering, A/B Testing, Causal Inference, Pandas, NumPy

Data Engineering: ETL Pipelines, Data Warehousing, BigQuery, PostgreSQL (SQL), MongoDB (NoSQL), Data Acquisition & Web Scraping (Selenium, BeautifulSoup, Playwright)

Backend & APIs: FastAPI, Flask, Node.js, Next.js, REST API Design, Microservices Architecture

Frontend & Visualization: React, Streamlit, Dash, Shiny (R), Plotly, Power BI, Tableau

Automation & Workflows: n8n, API Integrations, Workflow Automation, Data Pipelines

Deployment & Tools: Docker, Git, GitHub Actions (CI/CD), Vercel, Render

Applied Modeling: ODE Modeling, Dynamical Systems, Bayesian Methods, Fuzzy Logic, Markov Models, Ablation Studies

Languages: Python, R, JavaScript (ES6), SQL, C++, C#