

# Ahmeduddin Mohammed

Harrison, NJ | +1 (862) 405-7606 | mohammed.ahmeduddin16@gmail.com | LinkedIn | GitHub | Portfolio

## Technical Skills

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**ML & Deep Learning:** PyTorch, LSTM, Transformer, Bidirectional RNN, XGBoost, scikit-learn, SHAP, Optuna  
**Causal Inference:** DoWhy, EconML, CausalForestDML, T-Learner, X-Learner, PSM, DiD, MMD, PSI  
**LLM & Agents:** LangGraph, LangChain, GPT-4o-mini, RAG, ChromaDB, sentence-transformers, Function Calling  
**MLOps & Cloud:** MLflow, Docker, GCP Cloud Run, GitHub Actions, HuggingFace Spaces, LangSmith, pytest  
**Data & Backend:** Pandas, NumPy, dbt, PostgreSQL, Redis, FastAPI, SQLAlchemy, Pydantic v2, Alembic  
**Languages:** Python 3.11, SQL, TypeScript, JavaScript, Bash

## Professional Experience

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### Jr. ML Engineer

Jul 2025 – Present

*FL Tech Solutions LLC*

*Florida, United States (Remote)*

- Completed 10+ peer code reviews per sprint; updated ML docs cutting new-engineer onboarding time by **~25%**.
- Cleaned and validated 50K–200K-record datasets with Pandas and SQL, reducing pipeline errors by **~30%**.
- Logged 10+ metrics (AUC, F1, KS) in MLflow across 3+ A/B runs, improving production model accuracy by **~15%**.
- Evaluated 5+ ML tools (LangChain, ChromaDB, sentence-transformers); cut architecture decision time by **~20%**.
- Maintained model cards, API specs, and runbooks across 5+ systems, reducing incident resolution time by **~25%**.

### Python & Data Science Instructor

Aug 2023 – Dec 2023

*Full Stack Academy*

*Hyderabad, India (On-site)*

- Taught **20+ students** Python, OOP, and algorithms using Pandas, NumPy, and Matplotlib over 5 months.
- Designed **15+ exercises** on EDA and data wrangling using Pandas, NumPy, Seaborn, and Matplotlib.
- Mentored **3+ mini-projects** on preprocessing and feature engineering for data science tasks.

### Data Science Intern

Jun 2022 – Jul 2022

*Delta Sigma Technologies*

*Hyderabad, India (Remote)*

- Built pipelines for **100K+ records** using Pandas and NumPy with imputation and encoding.
- Ran **50+ tuning experiments** via grid search and CV, lifting model accuracy from **76% to 89%**.
- EDA with Seaborn and Matplotlib on distributions, correlations, and class imbalances for review.

## Projects

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### SessionScout – Real-Time E-Commerce Conversion Scoring

GitHub | Live Demo

*PyTorch, LSTM, Transformer, XGBoost, FastAPI, Redis, Docker, HuggingFace Spaces*

- 4-model cascade (LR → XGBoost → LSTM → Transformer); **AUC 0.9868, 27ms p95**, Redis caching.
- **121 features** (session, sequence, device); gating routed **60%** to cheaper models, cutting cost.
- Deployed on HuggingFace Spaces with GitHub Actions CI/CD; **121 unit tests, 93% coverage**.

### LiftLab – Causal Inference Engine for Promotion Uplift

GitHub

*DoWhy, EconML, CausalForestDML, SHAP, MLflow, PSI, MMD, Streamlit*

- 5 estimators (PSM, DiD, T/X-Learner, CausalForest) on **14M rows**; segments showed **3.5x CATE lift**.
- CausalForestDML honest splitting gave confidence intervals; MMD at **0.136** flagged drift.
- SHAP validated cross-estimator consistency; **53+ tests, 81% coverage** with MLflow tracking.

### LoanLens – AI Credit Risk Explainer with CFPB Reg-B Compliance

GitHub | Live Demo

*XGBoost, SHAP, LangChain, ChromaDB, GPT-4o-mini, dbt, PostgreSQL, MLflow*

- Scored **307K applications**; XGBoost **AUC 0.77, KS 0.41**; SHAP mapped to 90+ CFPB Reg-B codes via dbt.
- **9,977 chunks** in ChromaDB; GPT-4o-mini generates notices in **under 4s**; grounding score **1.0**.
- PSI drift monitoring with Slack alerting; **96 tests, 89% coverage**.

### CareAgent – Multi-Agent Healthcare Provider Quality Scoring

GitHub | Live Demo | API

*LangGraph, LangChain, GPT-4o-mini, Isolation Forest, GCP Cloud Run, PostgreSQL*

- Orchestrated **5 agents** via LangGraph StateGraph; automated scoring of **10,000 CMS Medicare providers**.
- **0.36s** pipeline; Isolation Forest flagged **3% anomaly rate**; routing skips low-quality stages.
- Deployed on GCP Cloud Run with LangSmith tracing; **99 tests, 92% coverage**.

## Education

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### New Jersey Institute of Technology

Jan 2024 – May 2025

*Master of Science in Computer Science*

*Newark, NJ*

### Muffakham Jah College of Engineering & Technology, Osmania University

Aug 2019 – Jul 2023

*Bachelor of Engineering in Information Technology*

*Hyderabad, India*