Mohammad Irfan

Data Scientist

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PROFESSIONAL SUMMARY

Data Scientist with 4 years of experience in financial AI solutions, specializing in machine learning, NLP, and LLM-based systems. Skilled in building scalable ML pipelines and leveraging diverse data to deliver business impact. Backed by GATE qualification, INSPIRE fellowship, and peer-reviewed research in Computational Physics.

TECHNICAL SKILLS

Programming Languages: Python, Fortran, PySpark
Frameworks: Flask, FastAPI, PyTorch, Tensorflow, LangChain, LlamaIndex, Qdrant, FAISS
Tools: GIT, AWS, Data Warehouse, Postman, Snowflake, Docker
Databases: SQL Server, MongoDB, Big Query
Methodologies: A/B Testing, CI/CD, LLMs, RAG, Vector DB, Gen AI, Agentic AI

PROFESSIONAL EXPERIENCE

Assistant Manager – Data Scientist   **Sep 2023 - Present**
Hitachi Payments Services   **Mumbai**

- Developed and deployed a nationwide ATM cash forecasting system using SARIMAX and Fourier-transformed time series models, achieving 72% prediction accuracy, optimizing cash replenishment cycles, and improving Cash Enhancement Ratio (CER) by over 15%.
- Designed an explainable ML pipeline leveraging XGBoost and SHAP to identify root causes of ATM cashouts. Integrated spaCy-based NLP to extract structured drivers from CRA/branch remarks. For future predictions, incorporated a RAG pipeline using LangChain, LlamaIndex, and Qdrant to enrich forecasts with machine-specific historical context, enabling proactive insights into potential cashouts. This solution improved CRA accountability and reduced estate-level costs by 5–7%.
- Deployed a scalable NLP pipeline on AWS (Lambda, Elastic Beanstalk) with CI/CD, parsing ATM Electronic Journals to extract HW/NW issues and failure types, storing outputs in Snowflake/SQL Server for downstream analytics.
- Optimized nationwide Factor of Safety (FoS) penalties for SBI ATMs using K-Means clustering on dispense/transaction data; automated pipeline with Airflow, reducing FoS penalties by 12–15% and enhancing cash management efficiency.

Jr. Data Scientist   **Feb 2022 - Sep 2023**
Innovation Hacks   **Mumbai**

- Implemented an attention-based neural network for sequence-level entity matching, learning token representations and capturing semantic relevance for accurate entity resolution (ER). Achieved an F1 score of 78.5% on the OLIST e-commerce dataset.
- Built an LLM-powered agentic assistant using LLaMA 3-70B and GPT-3.5 to generate real-time, contextual summaries of Discord channel discussions. Integrated FAISS vector DB to store and query embedded messages, enabling concise responses and enhancing team awareness, reducing time spent navigating chat histories.
- Led a team of 3 members (Jr. Data Scientists + Backend Developers) in the product development and backend API integration for upcoming Data Fusion software.

EDUCATION

MSc. in Computer Science: Artificial Intelligence and Machine Learning   Apr 2026
Woolf University, Scaler Neovarsity

Masters in Medical Physics   Dec 2021
Bhabha Atomic Research Centre (BARC), Mumbai   Mumbai, Maharashtra

BS-MS Dual Degree in Physics   June 2018
Indian Institute of Science Education and Research (IISER), Bhopal   Bhopal, Madhya Pradesh

CERTIFICATIONS

- CSIR-UGC NET Qualified 2018
- GATE Qualified 2018, 2020
- JEST Qualified 2019
- INSPIRE Research Fellowship 2013-2018

ACHIEVEMENTS

- Contributions in various peer-reviewed journals like Royal Astronomical Society, European Journal of Physics and DAE symposium and conferences in High Energy and Quantum Physics.