Adarsh Kumar Verma

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adarshv0524.github.io/Portfolio

EDUCATION

VIT BHOPAL UNIVERSITY   Bhopal, Madhya Pradesh
Bachelor of Technology in Computer Science and Engineering(AI&ML)   Sep 2026
Cumulative GPA: 8.66/10.0

D.P. Public School - Intermediate(92%)   Prayagraj, Uttar Pradesh
Little Flower School - High School(91%)   Harraiya, Uttar Pradesh

PROJECTS

Machine-Learning-Based Market Regime Detection and Backtesting
- Built a Python pipeline to identify market regimes from historical price data by combining statistical features and unsupervised learning (PCA + Gaussian Mixture Models) for latent state clustering.
- Developed regime-aware strategy rules that adapt trading signals depending on identified regimes and evaluated performance using automated backtesting with key metrics such as Sharpe ratio and maximum drawdown.
- Automated visualization of regime timelines and equity curves using Matplotlib, enabling clear insights into regime transitions and strategy effectiveness across different market conditions.

AI Document Intelligence Engine with Hybrid Retrieval
- Engineered an advanced RAG system that improved information retrieval relevance by over 40% through a hybrid search engine combining FAISS vector similarity and keyword matching
- Architected a scalable Flask backend with four caching layers to enable multi-modal analysis of text and images.
- Secured the multi-tenant platform by implementing end-to-end data privacy , integrating Firebase for multi-provider OAuth 2.0 authentication, and enforcing complete user data isolation across vector stores, caches, and file systems

Streaming Analytics Data Engine
- Engineered an ETL pipeline for large-scale data (25M+ records) from TMDB and MovieLens using Python (Pandas) and SQL, creating curated analytical tables for trend analysis.
- Developed an interactive Power BI dashboard to visualize genre performance, forecast demand, and identify content gaps, enabling data-driven decision-making.

SKILLS

Technical Skills: Python, C++, Keras, NLP, Computer Vision, GenAI, Firebase, Flask, MySQL, Flutter
Non-Technical Skills: Figma, UI/UX, Microsoft Suite, OBS.

EXTRA-CURRICULAR

CLUB MEMBER - Android Club
- Developed user interface for cross-platform CGPA calculator app using Flutter, incorporating student feedback

ACHIEVEMENT

- University finalist in Smart India Hackathon (SIH), selected from 200+ teams for innovative solutions.

CERTIFICATIONS AND WORKSHOPS

- IBM AI Engineering Specialization | Coursera — Issued by IBM Skills Network
- Machine Learning Specialization | Coursera (Stanford University & DeepLearning.AI)
- CINE C-DAC Value-Added Workshop: Mastered ML algorithms, deployed ML pipelines, fine-tuned GPT-2, and accelerated code integration by 30% through Git workflows in a 30-hour workshop.