ARCHIT PRASAD

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EDUCATION

B.E. in Computer Science Engineering (Cloud Computing)   2022 – 2026
VIT Bhopal University   *CGPA: 7.79/10*
Relevant Coursework: Machine Learning, Cloud Computing, Data Analytics, Database Systems

PROJECTS

Conversational Data Analysis Agent   *Sep 2025*
- Architected a ReAct (Reasoning and Acting) agent using LangChain, equipping it with a dynamic toolset for parsing natural language into executable Python code.
- Engineered prompts for Mistral-7B via the Hugging Face API, enabling the synthesis of complex code to handle over 30 unique Pandas operations on datasets up to 50MB.
- Deployed the full-stack agent in a Streamlit application with session state management, reducing data exploration time by over 90% for non-technical users.

Docs - Bot   *Sep - Oct 2025*
- Developed a multi-source chatbot that builds a unified knowledge base from diverse formats (PDFs, TXT, live URLs), reducing information retrieval time by 95%.
- Built an end-to-end RAG pipeline using LangChain, creating a vector store in ChromaDB with 'sentence-transformers' embeddings and leveraging the Groq API for low-latency LLM inference.
- Implemented source-citing functionality in the Streamlit UI to display the exact text chunks used for generation, enhancing transparency and user trust in the AI's responses.

Stock Portfolio Risk Analyzer   *Aug 2025*
- Engineered a dashboard for quantitative risk analysis, running 10,000 Monte Carlo simulations to project potential future returns and downside risk.
- Integrated time-series models from libraries like 'arch' (GARCH) for volatility prediction and 'prophet' for value forecasting to provide predictive asset insights.
- Utilized the PyPortfolioOpt library to solve the mean-variance optimization problem, recommending asset allocations that maximized the Sharpe Ratio by 18% in back-testing.

ICT Market Demand Forecasting Agent
- Engineered a Time-Series Forecasting Model using ARIMA (1, 1, 0) to predict ICT investment, validating its performance with an RMSE of $12.34 Billion.
- Applied diagnostic statistical techniques (ADF, ACF, PACF) to achieve data stationarity and determine model parameters, confirming high quarterly investment dependence (ar.L1=0.9040).
- Generated a 5-year strategic forecast with a 95% Confidence Interval and authored a 1-page report providing substantiated recommendations for a Cautious Expansion Strategy.

SKILLS

- **AI/ML & Data Science:** Python (Pandas, NumPy), Scikit-learn, LangChain , OpenCV,n8n,RAG
- **Backend & Deployment:** FastAPI, Streamlit, GitHub, Containerization, AWS
- **Databases & Tools:** SQL, MS SQL Server, Git
- **BI & Visualization:** Power BI, Tableau, Seaborn, MS Excel

CERTIFICATIONS

- Deloitte - Data Analytics Job Simulation   Jun 2025
- IBM - DevOps Fundamentals   Apr 2025
- Oracle - Foundations Associate   Sep 2025

ACHIEVEMENTS

- Finalist - IIIT UNA Hackathon
- Finalist - Dataverse Hackathon (DTU, Delhi University)
- Top 12 - ZS Beats Global Analytics Competition