Nithin Sameer Yerramilli

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Summary

Data professional with 2+ years experience combining machine learning expertise with storytelling. Skilled at developing AI solutions, analyzing complex datasets, communicating insights through visualization and stakeholder collaboration.

Skills

Languages and Tools: Python, R, SQL, Tableau, Git, Latex, Databricks, Next.js, Excel
Frameworks and Libraries: TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy, Seaborn, Matplotlib, NLTK
Cloud Technologies: AWS

Experience

Data Analyst Intern Aug 2024 - Present
Graduate Studies Dept. (GMU)

- Implementing **machine learning models** to analyze student admission data, improving prediction accuracy by 23%.
- Creating interactive dashboards using **Tableau** to visualize key metrics, increasing data accessibility and enabling data-driven student engagement strategies.
- Executed end-to-end recruitment funnel analytics using **Salesforce** by aggregating cross-regional campaign data and enrollment metrics, driving strategic insights for international admissions optimization.

Data Scientist Aug 2024 - Dec 2024
Erasmus.AI

- Built ClimateGPT's core **function calling** architecture using **Python**, enabling the AI model to execute 60+ specialized climate analysis functions through a **unified tool interface**.
- Developed an intelligent **query router** and flexible tool calling system that allows ClimateGPT to analyze climate data from NOAA, NASA and World Bank databases through **natural language queries**.
- Led technical design decisions as **Product Owner** in an **Agile** team of 4, implementing modular data processing pipelines that power ClimateGPT's automated climate impact analysis capabilities.

Machine Learning Research Associate Aug 2023 - Aug 2024
Costello College of Business (GMU)

- Led advanced **statistical analyses** on India's largest household survey dataset (174,000+ households across 27 states) using **R** and Python, uncovering a 12% decrease in spending patterns post-app bans through **CEM**, **difference-in-difference analysis**, and **regression with survey weighting.**
- Designed and implemented machine learning models achieving 85% accuracy in **forecasting** consumer behavior trends. Optimized big data preprocessing workflows using **PySpark**, enhancing efficiency for downstream ML tasks.
- Validated results from Research papers and Journals. Communicated findings to stakeholders detailing KPI's.

Projects

AI-Powered Multilingual Chatbot - Headstarter Fellowship Jul 2024 - Aug 2024
(Generative AI, NextJS, Tailwind, RAG)

- Engineered a sophisticated ML-based chatbot using Next.js and executed Retrieval Augmented Generation (RAG), increasing query response accuracy by 22% across multiple languages.
- Implemented RAG architecture using Langchain and Pinecone, significantly expanding the chatbot's knowledge base and improving its ability to provide contextually relevant responses.
- Composed a custom LLM routing mechanism using Groq's Mixtral-8x7B and OpenAI's GPT-4, optimizing response times and expanding the knowledge base for contextually relevant responses.

Demographic Bias in Recidivism Prediction - College Project Jan 2023 - May 2023
(R, Chi-Square Analysis, Stepwise Selection)

- Developed a predictive model achieving 76.5% accuracy in identifying recidivism risk factors using R, employing Stepwise Selection and Chi-Square analysis.
- Identified key insights into the correlation between work history and recidivism using a Decision tree, shedding light on racial disparities in post-release supervision.
- Implemented Decision Tree analysis using R, identifying critical employment thresholds that differentiate recidivism probabilities, with employment status influencing recidivism predictions at a key threshold of 64.3% days employed.

Education

Master of Science Data Analytics Engineering, George Mason University CGPA: 3.96/4.0 Jan 2023 - Dec 2024
Bachelor of Technology in Computer Science, Dayananda Sagar University CGPA: 3.50/4.0 Aug 2018 - Jun 2022