VISHNU SAI KARTHIK GINDI

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Experience

Alabama Water Institute   April 2023 – May 2024
Research Assistant   *Tuscaloosa, AL*

- Designed a complex data workflow for the National Snow Model using Pandas and Dask, improving data processing efficiency by 25 percent.(Presented)
- Built a CNN-based machine learning model for snow prediction, increasing SWE precision by 15 percent.(Published ↗)
- Developed and managed data ingestion processes using concurrency and asyncio, integrating with AWS S3 and Google Cloud, improving data processing speed by 3x.
- Developed an LSTM-based streamflow prediction model for ungauged areas using synthetically generated data.

Alabama Transportation Institute   Sep. 2022 – April 2023
Research Assistant   *Tuscaloosa, AL*

- Collected, cleaned, and analyzed crash data using SQL and Python, providing actionable insights for traffic safety.
- Extracted and cleaned data from APIs and third-party sources, using RoBERTa and NLTK (VADER) to analyze sentiment shifts in media bias on autonomous vehicle incidents.
- Implemented real-time traffic analytics using Spark and Python, enhancing data processing efficiency by 2x and ensuring scalability of ETL pipelines.
- Processed complex SQL queries, including Joins, Triggers, and Window functions, for data manipulation in SQL Server.

IMR Software   July 2021 – June 2022
Data Scientist   *Hyderabad, India*

- Conducted exploratory data analysis (EDA) using Python and Tableau, enhancing insights for business decisions.
- Developed and optimized Spark jobs for large-scale data transformations, contributing to scalable ETL pipelines for model preparation and deployment.
- Improved model accuracy by 20 percent using feature engineering techniques like RFE and LightGBM.
- Assisted senior data scientist with ML model development and evaluation using PyTorch and TensorFlow frameworks.

Projects

Medical Record Search Engine ↗ | *Langchain, Pandas, Streamlit, Neo4j, Groq*

- Developed a RAG-based chatbot to streamline healthcare data access using a graph database and LLM, improving decision-making efficiency by 2x for healthcare professionals and hosted it using streamlit.

Movie Recommendation Engine ↗ | *Pandas, PyTorch Geometric, Graph Neural Networks*

- Engineered a hybrid recommendation system using Graph Neural Networks (GCN, GAT) and Factorization Machine, boosting prediction accuracy of user-item interactions by 15 percent.

Customer Support Chat Assistant ↗ | *PyTorch, NLP, Text Generation, Transformers*

- Implemented Seq2Seq model with attention mechanisms and beam search, improving response accuracy by 30 percent for customer support queries.

SmartComplete ↗ | *Pandas, NLTK, PyTorch, Flask, Google Cloud Console*

- Achieved 90 per accuracy in next sequence prediction by implementing LSTM and GRU with n-gram preprocessing. Deployed via a Flask (REST API) with a web interface, hosted on Google Cloud Platform (GCP).

Education

University of Alabama   August 2022 – May 2024
Master of Science in Computer Science   *Tuscaloosa, AL*

Sri Venkateswara University   August 2017 – Sep. 2021
Bachelor of Technology in Computer Science   *Tirupati, India*

Skills

Programming: Python, SQL, C++, Bash, HTML, CSS.
Databases: SQL Server, PostgreSQL, MongoDB, Neo4j, Vector Databases
Big Data Tools: Apache Spark, Hive, Dask, BigQuery
Data Visualization: Tableau ↗, Looker Studio, Microsoft Excel
Cloud Platforms and other Tools: Azure Certified ↗, AWS SageMaker, Google Cloud, GitHub, CI/CD Pipelines, Jira
Machine Learning: MLOps(MLflow), PyTorch, TensorFlow, Scikit-learn, Graph Neural Networks, Transformers, Pandas, CuDF, Numpy, Dask