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Vinay Ram Gazula

Graduate Student

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Education

Master of Science | New Jersey Institute of Technology, NJ, USA — Graduating: May 2025
Major: **Data Science Computational Track** — GPA: 3.83
Coursework: Applied Statistics, Advanced Database Systems Design, Machine Learning, Deep Learning, Data Visualization

Bachelor of Technology | SRM University, AP, India — 2017 - 2021
Major: Mechanical Engineering — GPA: 3.52
Awarded with merit scholarship of 50% tuition fee for the entire bachelor's degree

Experience

New Jersey Institute of Technology, NJ, USA

Research Assistant | *NJIT Engineering Education Research* — July 2024 - Present

- Collaborated with educational researchers to analyze real world institutional student data and identify factors affecting their academic performance using machine learning techniques
- Actively participated in data cleaning, handling missing data, and preparing datasets for analysis to ensure data quality and reliability
- Developed regression models, including Multiple Linear Regression (90.74% accuracy), Random Forest (91.04% accuracy) and XGBoost (91.14% accuracy), to predict student GPA using R

Teaching Assistant | *CS-634 Data Mining Course* — May 2024 - Present

- Responsible for grading weekly homework, quizzes, and course projects, ensuring timely feedback and fair assessments
- Assisted students with their course projects, guiding them through Python coding, while evaluating their code for final grading

Research Assistant | *Data and Knowledge Engineering Lab* — Sept 2023 - May 2024

- Integrated Explainable AI (xAI) tools and leveraged interpretability into deep learning tools used for space weather research
- xAI tools like LIME, SHAP, Anchors, PDP and ALE plots are incorporated using Python into a transformer model named "SolarFlareNet"
- Successfully retrained the SolarFlareNet model without compromising the model's accuracy, maintaining an accuracy of 90.7%
- Presented a poster paper at the FLAIRS, an AI Conference, showcasing research findings to a professional audience

Projects

WebScraping Using R | *R, rvest, ggplot* — Spring 2024
Capstone Project | Data Analytics Using R Programming Course — Github

- Developed a web scraping tool using the rvest package in R to collect articles (2008-2024) from an open-access journal "Parasites & Vectors"
- Implemented a unique scraping approach that minimizes resource usage by only fetching newly added articles after the initial data scrape, significantly reducing computational costs and time
- Cleaned the raw data using techniques such as regular expressions (regex) and conducted exploratory data analysis (EDA) using the ggplot

eComputer Store Database System | *MySQL, Python, Streamlit, Pandas* — Fall 2023
Capstone Project | Data Managment Systems Design Course — Github

- Developed a comprehensive database system for an e-commerce store using MySQL for back-end management, following a structured approach including the creation of ER diagrams and transforming them into a relational database schema
- Built an interactive web-based user interface using Python's Streamlit library, enabling users to query and interact with the database
- Deployed the system on Github Pages, providing seamless access to the database for users through a fully functional web application

AlgoTrade API | *Python, yfinance, Pandas, Tensorflow, ks-api-client* — 2023
Personal Project — Github

- Developed a fully automated trading bot for NSE stocks using Python, integrating real-time and historical data with the yFinance library
- Implemented technical analysis by calculating technical indicators such as Moving Average, MACD, Bollinger Bands etc., with various trading strategies based on these indicators to automate buy/sell decisions
- Trained machine learning models, including LSTM, using historical stock data to predict and forecast stock prices
- Integrated Kotak Securities API (ks-api-client) for executing live trades based on the generated strategies

Publications

3. Interpretable Deep Learning for Solar Flare Prediction — IEEE ICTAI 2024 (Accepted)
2. An Interpretable Transformer Model for Operational Flare Forecasting — FLAIRS 2024
1. Accelerating a Hypersonic CO_2 Reaction Solver — IHMTC 2021

Skills

Languages: Python, R, SQL, PL/SQL, Bash, JavaScript, C/C++
Other: **Analytics**: Excel, Tableau, Power BI, D3.js; **Cloud Sys.**: AWS, Azure, GCP
Databases: MySQL, Oracle, MongoDB, BigQuery
Version Control: Git, GitHub, GitLab
Operating Sys.: Linux, MacOS, Windows, UNIX
Markup Lang.: LaTeX, HTML, CSS, Markdown

Achievements

- Google Data Analytics Professional Certificate — *Coursera* — 2023
- Algorithmic Trading & Quantitative Analysis Using Python — *Udemy* — 2023