VINAY RAM GAZULA

GRADUATE STUDENT

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EDUCATION

Master of Science | New Jersey Institute of Technology, NJ, USA

Major: Data Science Computational Track

Coursework: Applied Statistics, Advanced Database Systems Design, Machine Learning, Deep Learning, Data Visualization

Bachelor of Technology | SRM University, AP, India

GPA: 3.83

Graduating: May 2025

Major: Mechanical Engineering

2017 - 2021 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 **P** Github

Personal Project

- · 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

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

SKILLS

Other:

Languages: Python, R, SQL, PL/SQL, Bash, JavaScript, C/C++

Analytics: Excel, Tableau, Power BI, D3.js

Databases: MySQL, Oracle, MongoDB, BigQuery

Version Control: Git, GitHub, GitLab

Operating Sys.: Linux, MacOS, Windows, UNIX Markup Lang.: MEX, HTML, CSS, Markdown

ACHIEVEMENTS

• Google Data Analytics Professional Certificate — Coursera

Cloud Sys.: AWS, Azure, GCP

Analyzia Haing Dython Hidawa

Algorithmic Trading & Quantitative Analysis Using Python — Udemy

20232023

September 26, 2024