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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

Major: Mechanical Engineering

2017 - 2021

GPA: 3.83

Graduating: May 2025

Awarded with merit scholarship of 50% tuition fee for the entire bachelor's degree

GPA: 3.52

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

- 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

Personal Project

Exploratory Data Analysis on Global Soil Respiration Data | MySQL, Tableau

2024

P Github

- Conducted exploratory data analysis (EDA) on the Global Soil Respiration Database (SRDBv5) extracted from ORNL DAAC, focusing on understanding global soil respiration trends
- Imported raw CSV data into MySQL, performed extensive data cleaning, and implemented complex SQL queries (CTE, Nested, etc.,) to analyze the data
- Connected the MySQL database to Tableau Desktop to create interactive dashboards, providing visual insights into soil respiration data

WebScraping Using R | R, rvest, ggplot

Spring 2024

Capstone Project | Data Analytics Using R Programming Course

P 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

AlgoTrade API | Python, yfinance, Pandas, Tensorflow, ks-api-client

- Personal Project **P** 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++

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

Other: Cloud Sys.: AWS, Azure, GCP Databases: MySQL, Oracle, MongoDB, BigQuery

Version Control: Git, GitHub, GitLab

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

ACHIEVEMENTS

• Google Data Analytics Professional Certificate — Coursera

• Algorithmic Trading & Quantitative Analysis Using Python — *Udemy*

2023

2023

September 27, 2024