TEJESHWAR REDDY GANGIREDDY

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EDUCATION

Master's: Data science, University at Buffalo, The State University of New York, **February 2024**

Relevant course work: Statistical data mining using R, Machine learning (supervised and unsupervised), Probability and statistics, Data Models and Query Languages / CGPA: 3.5

SKILLS & TOOLS

Programing Languages (Python, java, SQL, R, MATLAB, C, HTML5, CSS3.)

Databases (PostgreSQL, SQlite3, MySQL, MongoDB, Cassandra)

Machine learning (Scikit-learn, TensorFlow, PyTorch, Reinforcement learning (OpenAI gym, TensorFlow RL), NLP (NLTK, spaCy, Hugging face, BERT, GPT 3.5), Langchian, OpenCV, Pandas, NumPy, Matplotlib, and Seaborn for data manipulation, visualization)

Tools/Technologies: Cloud (Azure, AWS, snowflake), Version control (Git, GitHub.), Spark, Apache Airflow, Docker, Databricks, Distributed streaming platform (Apache Kafka), CI/CD with Jenkins, Agile methodology, powerBI for dashboards and visualization.

WORK EXPERIENCE

Software Engineer (RLHF), Outlier AI, inc. (Independent Contractor). **May 2024 – present**

- Applied Reinforcement Learning with Human Feedback (**RLHF**) to enhance AI model performance by providing human feedback and ensuring accurate **API executions** based on user inputs. conducted rigorous monitoring and validation of model outputs, refining decision-making processes through iterative feedback loops, resulting in a **15% increase in model efficiency** and accuracy.
- Collaborated with cross-functional teams to align model outputs with business objectives and user requirements, developing and implementing training protocols to optimize model performance.
- Led the development of the **multitier deviation detection system**, Flamingo, designing initial prompts and evaluation methods to ensure accurate and relevant model responses. created techniques to identify coding deviations across multiple layers, managing multi-turn interactions and follow-up prompts to **refine model behavior and responses**.
- Conducted detailed assessments to establish task baselines, enhancing system robustness and error detection, streamlining workflow for deviation resolution, and **reducing resolution time by 20%.**

Data Analyst intern, Eitacies Inc, Santa Clara, CA. **July 2023 – December 2023**

- Developed a SaaS platform aimed at enhancing security and compliance in conference settings through cutting-edge computer vision and **ML/AI** techniques. Annotated video frames containing the region of interest using the **CVAT annotation tool** and built an object detection model using the pretrained **ultralytics YOLO** object detection module. One of the core modules involved using object detection models to identify PCI DSS violations within conference recordings.
- Implemented real-time object detection capabilities. adjusted the model's parameters and training processes which have optimized performance **by 35%.** Integrated OCR technology, specifically **Tesseract OCR**, into our platform, I've enabled precise text detection and extraction from conference recordings. Also, used pre-trained **BERT** and **GPT-3.5 base** models for text classification.
- Led the development of a scalable content moderation AI on Azure, employing **TensorFlow** for model training. Utilized **Azure Blob Storage** for efficient data storage, Azure Functions for real-time alerts via Azure Service Bus, and Azure Virtual Machines for computational resources. Demonstrated expertise in strategic tool selection and deployment on Azure cloud infrastructure, ensuring robust scalability and reliability. Architected and implemented a **YOLO-CNN** solution for PCI-DSS compliance monitoring in video streams on the Azure platform. Deployed with Azure Machine Learning for real-time inferencing, leveraging **Azure Kubernetes Service** for container orchestration to ensure seamless scalability and reliability.
- Implemented **Azure Stream Analytics** for streaming data ingest, facilitating real-time processing of incoming data streams. Leveraged Azure Machine Learning for **ML model orchestration**, ensuring efficient management and deployment of machine learning models. Models were deployed with a blue/green deployment strategy using **Azure App Service**, providing zero downtime and instant rollback capabilities for seamless updates and maintenance. Incorporated **Agile methodology** for iterative development and responsiveness to evolving requirements.

PROJECTS

Inventory Management System: PostgreSQL, python **February 23 - May 23**

- Designed one of the best and optimized inventory management systems. The major goal of the database design is to locate entities engaged in inventory management. then determined each entity's properties using these entities.
- The created database followed **BCNF**, also tested database by updating and deleting data entities, used **Indexing** for Improved performance and created several functions.
- Developed a user interface where users can give the SQL queries in input box and fetch the results through web page which is deployed on a local server. used **HTML, CSS, and ReactJS** to create user interface.

Time series Analysis project (oil price dataset): R programming, ggplot2 **February 23 - May 23**

- Preprocessed the dataset, imputed missing values using seadec imputation, performed **augmented dickey fuller test** to check non-stationarity of dataset.
- Tested several models i.e., **ARIMA, SARIMA, Holt winters, ETS, STL, Prophet** etc. used AIC, BIC and RMSE values as metrics to evaluate performance of models, also created several plots for analysis.

Recession Prediction: python (matplotlib, seaborn), R (ggplot2) **August 22 – December 22**

- Demonstrated a thorough comprehension of macroeconomic concepts leveraging time series data starting from 1960. observed correlations between features, including yield curve data. Utilized data of the past 58 years to provide predictions.
- Developed expertise in **model selection**, filtering features, and **hyperparameter tuning** to achieve a **predictive accuracy of 80%** for identifying economic recessions. Skilled in building predictive models for economic analysis.
- Gained expertise in **identifying trends**, **seasonal patterns, cyclic patterns,** and **autocorrelation** in time series data.

Customer Segmentation: python, SQL **August 22 – December 22**

- Led a customer segmentation analysis, determined distinct customer groups based on previous purchases and demographic data. **Improved model accuracy by 20%** over previous product-based segmentation methods.
- Developed a deep understanding of clustering and dimensionality reduction techniques, specifically deploying **Principal Component Analysis (PCA)**, to extract meaningful insights from customer data.
- Devised targeted marketing strategies resulted in a **12% increase** in overall customer engagement and an increase in sales.