Kowshik Kesavarapu

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Personal Profile

Accomplished Data Scientist with a robust background in machine learning, natural language processing (NLP), and advanced analytics. Holds an M.Sc. in Data Science from the esteemed University of Surrey, complemented by over 6 years of hands-on experience. Adept at delivering cutting-edge data solutions, specializing in demand forecasting, automated classification, and the development of a Chat-GPT-like conversational agent using the Llama language model during tenure at Yunex Traffic Ltd. Proficient in Python and R, with a demonstrated ability for impactful data storytelling. Enthusiastic about optimizing processes and leading teams with data-driven insights. Eager to contribute expertise to an innovative organization, elevating its analytics potential.

Skills

Programming Languages : Python, R, SQL
Machine Learning Libraries : Pandas, PyTorch, NumPy, Scikit-learn, NLTK.
Frameworks : Flask , TensorFlow, Transformers
Cloud Platforms : AWS , GCP
Data Visualisation : Mat-plot , Seaborn , ggplot2
Soft Skills : Time Management, Leadership, Teamwork, Team Management, Project management, Scrum, Problem-solving, Documentation, Engaging Presentation, Fast Learner.
Miscellaneous : Linux, Microsoft Office, Firebase, Git, Microsoft Excel.

Work Experience

Innova Solutions — Hyderabad, India

Sr Data Scientist — July 2024 – Current

- Spearheading a technology leadership role in an advanced data insights initiative, driving strategic analysis and actionable intelligence generation
- Engineered an optimization algorithm to streamline logistical operations, enhancing overall supply chain performance
- Architected a predictive modelling solution to forecast production cycles and proactively identify potential scheduling delays, ultimately improving operational efficiency
- Developed comprehensive business intelligence dashboards using Power BI to transform complex data into intuitive, actionable visual representations

Independent Contractor - Cohere — UK

Data Scientist — November 2023 – July 2024

- Working with several companies as an independent contractor to optimise workflows using data insights and machine learning
- Data preparation for LLM finetuning
- Solving problems through machine learning
- Building Data analysis pipelines and Visualizations

Yunex Traffic — Poole, UK

Data Scientist — August 2021 – August 2023

- **Chat Bot Using LLM:**
  - Built conversational agent like **Chat-GPT** using **Llama** as language model.
  - This was fine-tuned on company's tender data. Integrated with internal tools using **Hugging Face** and **Flask** to automate and streamline tender generation.
  - Reduced manual effort for repetitive tasks. Enabled more efficient operations.
- **Classification based on Text.**

    - Optimized an in-house Incident Management tool using a Naïve Bayes classification model to efficiently categorize tickets and recommend actions.
    - **This Significantly reduced time spent on bill generation, increasing billing frequency from monthly to bi-weekly. Enhanced overall workflow and efficiency of the field services team.**
- **Traffic demand forecasting:**
    - Forecasted future traffic demand using real-time traffic loop data and time series models like **Prophet** and **SARIMA**.
    - Developed proof of concept for optimizing route planning and traffic light timing based on real-time forecasts. Identified best forecasting model for accurate and low-latency predictions.
- **Open AI Api implementation for in House chat bot**
    - Created a Chat bot for in house using Open AI API to create a chat bot to use internally for general purpose queries
    - Improved the performance by fine tuning the model to use the non-sensitive internal documentation to reduce manual effort
- **License Plate Detection:**
    - Detected vehicles and extracted license plates from video feeds using OpenCV computer vision algorithms.
    - Implemented Tesseract OCR to identify license plate numbers from images and counted total vehicles on the highway by processing video frames.
- **Business Impact Project:**
    - Conceptualized and deployed cloud-based website to increase student access to **STEM** education.
    - Created engaging learning activities tailored for different age groups.
    - Increased educational outreach and promoted greater interest in STEM fields.

Cognizant Technology Solutions Hyderabad, India

Analyst January 2019 – August 2021

- Worked on insurance domain project using mainframe technology, gaining experience with large-scale legacy systems.
- Developed database scripts to efficiently retrieve and analyse data. Optimized queries for performance.
- Identified and resolved countless bugs during development, implementing permanent code fixes for recurring issues. Improved overall system stability.
- Automated code base upgrade from COBOL 3 to COBOL 4 using Python, saving significant manual effort. Streamlined and accelerated process.
- Led team of 5 developers as a team leader. Provided guidance and mentoring. Coordinated task prioritization and planning. Ensured on-time, high-quality delivery.

Education

University of Surrey Guildford, UK

MSc in Data Science 2021-2023

• Achieved grade of 2.1

• **Courses**: Cloud Computing, Database Systems, Practical Business Analytics, Data Science Principles And Practices, Machine Learning And Data Mining, Natural Language Processing, AI And AI Programming, Computational Intelligence

KL University Guntur, India

BTech in Computer Science with Specialization in Data Engineering June 2014-May 2018

• Graduated with Distinction

• Worked as a President of the Student Committee

University Projects

A COMPARATIVE ANALYSIS OF TIME SERIES FORECASTING TECHNIQUES FOR PREDICTIVE MODELING ON TRAFFIC DATA Guildford, UK Nov 2022 - Nov 2023

University of Surrey

- Compared various time series forecasting techniques, including ARIMA, SARIMA, Prophet, and a hybrid Random Forest model, to predict traffic data.
- Explored traffic data patterns and implemented the models, evaluating their performance using metrics like MAE, MSE, RMSE, and MAPE.
- Concluded that the Random Forest-based hybrid model outperformed the traditional and modern approaches in accurately forecasting traffic.
- Highlighted the potential to further improve the hybrid model by incorporating additional features like event and weather data

Building a Chatbot to provide information on Restaurants on the University Campus Guildford, UK

University of Surrey Nov 2022 - Dec 2022

- Developed chatbot providing restaurant information using NLP concepts including intent recognition, NER, and dialogue flow.
- Implemented LSTM for intent recognition, training on labelled sample data.
- Created hybrid NER model with SpaCy, training blank model to identify tags.
- Used heuristics for dialogue flow management.
- Implemented CI/CD pipeline for continuous development.