

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 3 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

Yunex Traffic

Poole, UK

Data Scientist R&D

August 2022 – August 2023

- **Chat Bot Using LLM:**
 - Developed conversational agents akin to Chat-GPT, utilizing the Llama 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.**
- **OpenAI API Implementation for In-House Chatbot**
 - 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.
- **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.

- **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

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.