Josekutty Jose

Machine Learning Engineer

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Profile Summary

Highly motivated Machine Learning Engineer over 6+ months of experience in Generative AI with a passion for building impactful AI solutions. Proven ability to **design, develop, and deploy** machine learning models across various domains. Skilled in **data preprocessing, feature engineering, model selection, and hyperparameter tuning**. Experience working with **TensorFlow, PyTorch, and scikit-learn** and Expertise in **Quantization, Fine -tuning** and improving the models performance. Eager to contribute to a team environment and continuously learn new technologies.

Technical Skills

Languages: Python, HTML, SQL, CSS, Neo4j, Cypher

Frameworks : Tensorflow, Langchain, Streamlit, Pytorch , Fastapi

Libraries: Excel, Pandas, Numpy, Scipy, Scikit-learn

Tools & Platforms: Git, Dagshub,

Data Visualization: Power BI, Tableau , Matplotlib, Seaborn

Domain Skills: NLP, Statistical Modeling, Predictive Modeling, Data Analysis, Transformers, Machine Learning, Web Scraping, Generative AI, Deep Learning, CNN,Computer Vision, Artificial General Intelligence, AI

Projects

Detecting Air pollution in Mongolia using NLP | *Apify, T5 Bert , LSTM, Deberta LLM, Hugging Face* DagsHub

- Collaborated with a **23** - member team to develop and implement Environmental Sentinel on Social Media using **sentiment analysisf**or real-time air pollution monitoring in Mongolia.
- Applied 3 key techniques: **Market Research**, **Data Collection**, and **Preprocessing**, leading to successful **Model Development**
- Successfully scraped and collected **75,469** pieces of Mongolian text from diverse sources, including Mongolian social media platforms and news channels.
- Achieved sentiment analysis using **LSTM** with a focus on efficiency, utilizing minimal epochs due to lengthy processing time. Applied both categorical cross-entropy and binary cross-entropy loss functions, yielding**85%** accuracy for categorical loss and **55%** for binary loss.
- Leveraged advanced **LoRA** techniques to fine-tune LLM model, resulting in a remarkable **4%** increase in accuracy within a mere **3** training epochs.

Interview Preparation Chatbot: | *gtts , speech recognition , Chroma, DuckDB, Gemini.* Live | DagsHub

- Collaborated with a team of **30** to develop a Chatbot web application for Interview preparation.
- Collected **7000** questions and answers from different sources for Non technical Jobs using Beautiful Soup(Web Scraping).
- Implemented **Speech Recognition** technology to enable seamless interaction, enhancing the user experience through voice driven commands and responses using **gtts**and **speech recognition.**
- Implemented **RAG** (Retrieval-Augmented Generation) with **Chroma** and **DuckDB** as vector databases for efficient retrieval
- The answers were evaluated using the **vector similarity** check.

GemInsights: AI Automated Analyst | *Autoviz, Gemini, llama index, Trulens* Live | GitHub

- Collaborated with a team of **6** during a Gemini hackathon organized by LabLab, developing an automatic **EDA** (Exploratory Data Analysis) application using Gemini models.
- Generated Insights from **7** visualizations about the data and provide clarity in decision making
- Evaluated the answers from the LLMs using **Trulens**.
- The project were selected as the most upvoted project in the Gemini Hackathon.

Personal Projects

GenEye: Your Mental Health Assistant | *llama2, langchain , speech recognition, gtts, Qlora, Peft, Chroma* Github

- Conversational Chatbot built Large Language Model **llama2** and **Langchain** as Framework for visually impaired people.
- Used Libraries like **speech recognition** and **gtts** for identifying speech and converting the text to speech which can be accessed by any type of people.
- Model fine-tuned on Mental Health Dataset using **Qlora** and **Peft**.

Road Accident Dashboard | *Tableau* Link

- Developed a comprehensive road accident dashboard using Tableau to analyze 2019 - 2022 accident data and improve decision-making processes.
- Categorized accidents by 3 levels of severity and used visualizations to delve into the factors contributing to severe accidents.
- Conducted comparative analyses of accident statistics across regions and time periods, facilitating the assessment of safety measures and interventions.

Experience

Omdena Nov 2023 – Present

Junior Machine Learning Engineer *Remote*

- Collaborated with **25+** AI Engineers, developers and clients in remote settings, ensuring seamless project execution and delivery of AI applications or products which solves real word problems.
- Done web scraping using **beautiful soup** and **Apify** to collect **100,000** data from different sources to create dataset for quality prediction.
- Used Hugging face models like **facebook/bart-large-mnli** (**zero-shot classification**) and used language translation models like **T-5**, **Bert** and **Deberta** llm.
- Implemented **gtts** and **speech recognition** models like whisper for better user experience and interaction.

Education

Data Science using python Dec 2023 - Jan 2024

Brototype *Ernakulam, Kerala*

Big data data Science using python and AWS Jan 2022 - Aug 2022

Luminar Technolab *Ernakulam, Kerala*

B.com with Logistics and Supply Chain , CGPA : 6 2018 - 2021

Kristu Jayanti College *Bangalore, Karnataka*