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Machine learning engineer | github.com/Ponkothandaraman | linkedin.com/in/ponkothandaraman-s/ |

EDUCATION

Master of Data Analytics - 71.7%

Bharathiar University, Coimbatore April 2024

Relevant Coursework: [Data Analysis, Machine Learning & Deep Learning Algorithms, Exploratory Data Analysis, Natural Language Processing, Object Detection, LLM, Transfer Learning]

Bachelor of Mathematics - 77%

Bishop Heber College, Trichy May 2

SKILLS

Libraries	Python (Numpy, Pandas, Matplotlib, Seaborn, Scikit-Learn, Tensorflow, NLTK)
Languages	Python (Intermediate), SQL
Area	Data Preparation, Visualization, Model Building, Data modelling, Dashboarding, Reporting
Machine Learning	Clustering & Classification, Regression, Model Validation, Model deployment, Transformers
Tools	Jupyter Notebook, Jupyter Notebook, R Studio, MS Excel, Power Bi, Tableau,VS code
Technologies	Fundamentals (Hive, Pig) , Langchain, LLM, Object detection

EXPERIENCE

Machine learning engineer – Internship (ISPG Technologies India Pvt Ltd, Kochi) May 2024 - Present

- Graph data modelling for particular use case to achieve graph traversal
- Created graph traversal reactive forms with neo4j
- Writing complex cypher queries for LLM training
- Learning and working on Confluent kafka cloud for availability of data in multiple type of data bases
- Writing test cases for Chat-bot and checking its efficiency in the latest version of it
- RAG designing and implementation for Q&A on documents
- Testing the conversational search engine in multiple products
- Designing the UI and workflow of highly level intellectual chatbot

PROJECTS

DESIGN AND DEVELOPMENT OF E-ADVOCATE (BASED ON 100 CASES) - MAR 2024 View Project

- This project aims to develop a question-answering system tailored for legal documents, specifically focusing on Indian Penal Code (IPC) cases.
- Legal data was processed using text splitting techniques and converted into embeddings for semantic understanding. A FAISS based vector database is created to efficiently index and retrieve relevant legal documents
- A Question-answering chain was incorporated for retrieval and generation of context from vector database to generate accurate responses (RAG)
- The project includes a Streamlit-based user interface, allowing users to input queries related to IPC cases. The system retrieves and presents relevant legal information, providing a seamless experience for legal professionals and researchers.

DESIGN AND DEVELOPMENT OF DEEP LEARNING ARCHITECTURE TO PREDICT SHELF LIFE OF TOMATOES – DEC 2023 View Project

- Developed a deep learning object detection model based on YOLO architecture to predict tomato shelf life using transfer learning. Annotated images of various tomato stages to train the model for accurate prediction of shelf life.
- Achieved over 60% average accuracy in identifying tomato shelf life stages, ensuring reliable predictions. Implemented an efficient model architecture and training process for fast and accurate tomato shelf life prediction.
- Created a user-friendly interface using Streamlit to predict the shelf life of tomatoes.

OTHER AVTIVITIES

CONDUCTED WORKSHOP FOR 40 STUDENTS – DEC 2023

Topic: Data manipulation, Exploratory data analysis

- Conducted a hands-on workshop for 40 data analytics students by briefing the detailed exploratory data analysis and data manipulation on Kaggle datasets. Collaborated with the Department of Computer Applications to facilitate this interactive learning session.

PAPER PRESENTATION – MAR 2023

Conference: Recent trends and advances in the field of information and technology

- Presented a survey paper on emotion and anxiety detection methods for special children. Reviewed over fifty papers research work on the topics of autism, emotion detection, deep learning techniques to predict emotion to write this survey paper.

COURSES AND CERTIFICATIONS

- Descriptive statistics with R (NPTEL)
- Excel fundamentals for Data Analysis (Coursera)
- SQL for data science (Coursera)
- Machine learning with Python (Cognitive class)
- Data Analysis with Python (Cognitive class)
- Cypher fundamentals (Neo4j)
- Graph data modelling fundamentals (Neo4j)
- Introduction to LangGraph (LangGraph)