MELVIN A

Chennai, CHE| P: +91 7373335558 | melvinarulandu@gmail.com | linkedin.com/in/melvinarulandu

WORK EXPERIENCE

TRUETECH SOLUTIONS   Chennai, CHE
Data Science Intern   Jul 2024– Dec 2024

- Developed an NL2SQL system using GPT-4, Gemini 1.5, and Ollama, integrated with Pinecone for semantic retrieval.
- Achieved 83% accuracy using a custom multi-model evaluation framework for SQL query validation and optimization.
- Evaluated model performance using SQL match rate and BLEU score to assess syntactic and semantic accuracy.
- Optimized the query generation pipeline to reduce latency and improve real-time response times.
- Modularized components for prompt generation, vector embedding search, and SQL construction to ensure system scalability.

EDUCATION

HINDUSTAN INSTITUTE OF TECHNOLOGY & SCIENCE   Chennai, CHE
Master of Technology.   Aug 2023 – Apr 2025

  Major in Data Science
  CGPA: 8.65/10.0

KARUNYA INSTITUTE OF TECHNOLOGY AND SCIENCES   Coimbatore, COI
Bachelor of Technology   May 2019 – Apr 2023

  Major in Computer Science Engineering
  CGPA: 6.71/10.0

UNIVERSITY PROJECTS & PUBLICATIONS

ENHANCING DATA INTERACTION WITH RETRIEVAL-AUGMENTED SQL GENERATION   Feb 2025

- A Natural Language to SQL system was created using LLMs (GPT-4, Claude) and vector databases to align queries with user intent.
- Data collection, preprocessing, and feature extraction were designed to ensure effective sentiment classification.
- Tools and Languages: Pinecone, PostgreSQL, OpenAI API (GPT-4, text-embedding-ada-002), Python, and SQL.

NAVIGATING PLAYER PERFORMANCE CLUSTERS FOR SPORTS EXCELLENCE   Apr 2024

- Cricket player performance was analysed using K-Means clustering and Gaussian Mixture Models (GMM) to optimize squad selection.
- Developed a collaborative filtering recommender system with predictive accuracy.
- Research paper was published at the IEEE conference.
- Languages and Tools Utilized: Python, Matplotlib, Machine Learning, Recommender System.

SENTIMENTAL ANALYSIS FROM SOCIAL MEDIA POST FOR DISASTER MANAGEMENT   Mar 2023

- Conducted sentiment analysis on social media posts about disasters using CNN, GRU, and Bi-LSTM models to improve disaster management.
- Designed a system for gathering data, preparing it, and extracting features to effectively classify sentiment.
- Research paper was published at the IEEE conference.
- Languages and Tools Utilized: Python, Data visualization, NLP, Deep Learning, Neural Network.

SKILLS

- **Programming**: Python, SQL
- **Libraries & Frameworks**: pandas, NumPy, Matplotlib, Scikit-Learn, TensorFlow, PyTorch
- **Predictive Modeling & AI**: Machine Learning, Deep Learning, Neural Networks, NLP
- **Visualization & BI**: Power BI
- Tools & Platforms: GitHub, VS Code.

CERTIFICATIONS

- **Google Data Analytics Professional Certificate** – Coursera
- **Sports Analytics Course** – Royals School of Business.
- **Python Programming** – Jobaaj Learning
- **Introduction to Industry 4.0 and IOT** - NPTEL
- **SQL** - Jobaaj Learning