MUKKU SUMANTH

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SUMMARY

Highly motivated Data Science fresher with a strong academic background and a passion for Machine Learning. I am skilled in extracting insights from data and eager to contribute innovative ideas to data-driven decision-making. I am a fast learner and team player, committed to continuous growth in the evolving field of Data Science. Ready to make a meaningful impact on a dynamic team.

EXPERIENCE

AI/ML Subject Matter Expert – House of Couton Pvt. Ltd. Feb 2024 – Present

- Contributed to multiple AI/ML research projects and collaborated on research papers.
- Applied machine learning techniques in areas like recommendation systems, NLP, and computer vision.
- Strengthened skills in model development and evaluation.

AI/ML Intern – Indian Space Science Data Center (ISSDC) June 2024 – Nov 2024

- Developed a recommendation system for personalized access to space science datasets.
- Worked with data containing image links and user interaction history.
- Implemented LSTM for sequence analysis, cosine similarity for matching, and BERT for understanding text metadata.
- Improved system efficiency and recommendation relevance.

Data Analyst Intern – Metricly (Startup) July 2023 – Aug 2023

- Worked with various datasets to support machine learning model development.
- Created visualizations using Matplotlib and Seaborn to extract insights.
- Built an interactive Streamlit dashboard to present findings to the team.

SKILLS

- **Programming Languages**:
  - Python (Intermediate)
- **Databases**:
  - SQL (Intermediate)
- **Analytical Tools**:
  - Excel (Intermediate)
- **Development Tools:**
  - Jupyter Notebook (Intermediate)
  - FastAPI (Basic to Intermediate)
- **Core Skills:**
  - Data Science (Intermediate)
  - Machine Learning (Supervised & Unsupervised) (Intermediate)
  - Deep Learning (CNN, Sequential Models) (Intermediate)
  - Artificial Neural Networks (Intermediate)
  - Natural Language Processing (NLP) (Intermediate)
  - Transformers (Intermediate)
  - Retrieval-Augmented Generation (RAG) (Intermediate)
  - Agent-based Architectures (Basic)

EDUCATION

- B-Tech (Computer Science and Engineering) |Amity University Chhattisgarh 2020– 2024 | 7.76CGPA
- Class XII | Narayana Junior College, Gudavalli 2020 | 85%
- Class X | Indian Springs EM High School, Avanigadda 2018 | 92%

PROJECTS

- **Recommendation System**
  - Developed a personalized recommendation system using a combination of LSTM, cosine similarity, and BERT to match users with relevant data.
  - Balanced BERT's high computational load with performance tuning to maintain system efficiency while delivering highly relevant results.
  - Focused on improving retrieval accuracy based on user behaviour and metadata.

- **Video Data Retrieval and Summarization Tool Using Llama Index and Cohere API**

  Technologies: Streamlit, Python, Llama Index Router, Cohere API
  - Developed an interactive web application that processes multiple YouTube video URLs to deliver question answering and summarization features using advanced NLP techniques.
  - Implemented Llama Index Router for efficient content routing and management within the app, ensuring precise and context-aware responses.
  - Utilized Cohere API for natural language understanding and generation, enhancing the accuracy of answers and quality of summaries.
  - Built the frontend with Streamlit to provide a user-friendly interface for seamless interaction.
  - This tool enables users to quickly extract meaningful insights and concise summaries from lengthy video content, improving content consumption efficiency.

- **Student Feedback Sentiment Analysis**
  - Conducted sentiment analysis on student feedback regarding college activities and academic services.
  - Used BERT for encoding text data and implemented models such as Random Forest, SVM, and Logistic Regression for classification.
  - Applied Grid Search for hyperparameter tuning; Random Forest delivered the best performance due to its ensemble-based approach and robustness in handling varied sentiment expressions.

- **Legal AI Chatbot Assistant**

  Tools: Python, Lang Chain, Lang Graph, Gemini LLM, SERPER API, RAG Architecture
  - Designed and developed an AI-powered Legal Chatbot Assistant to provide accurate and context-aware responses to legal queries.
  - Integrated Large Language Models (LLMs) like Gemini with Retrieval-Augmented Generation (RAG) and an Agent-based framework to enhance reasoning and response relevance.
  - Utilized LangChain for chaining logic and Lang Graph for managing multi-agent orchestration.
  - Connected with SERPER API to enable real-time legal information retrieval from trusted sources.
  - Built a modular and scalable backend using Python to ensure efficient data handling and conversational flow.
  - Tailored for legal professionals, students, and individuals seeking fast, reliable legal assistance.

- **AI-Powered Multi-Agent Business Insight App**

  Technologies: Python, Streamlit, CrewAI, Gemini LLM, Serper.dev, APIs

  - Developed an interactive multi-agent AI application to generate actionable business insights based on user-input company or industry.
  - Designed and integrated four autonomous agents:
    - Researcher: Extracts company and industry insights.
    - Use Case Analyst: Recommends three AI/ML use cases.
    - Data Scout: Finds relevant datasets from Kaggle, HuggingFace, and GitHub.
    - Solution Architect: Suggests potential Generative AI solutions.
  - Utilized CrewAI for multi-agent orchestration and Gemini LLM + Serper.dev API for intelligent content generation and retrieval.
  - Delivered results through an intuitive Streamlit dashboard, enabling seamless interaction and clarity for business users.

- **Sentiment Analysis Web App with FastAPI and Machine Learning**

  Technologies: FastAPI, Python, MySQL, Sentence Transformers, Random Forest, SVM, FNN

  - Developed a full-stack Sentiment Analysis Web Application using FastAPI for real-time text classification and model selection.
  - Designed a user-friendly frontend allowing input of custom text and choice between Random Forest, SVM, and Feedforward Neural Network (FNN) models.
  - Implemented Sentence Transformers for high-dimensional embedding of input text, enhancing sentiment prediction accuracy.
  - Integrated a MySQL database to store interaction history and enable PDF report generation for previous predictions.
  - Ensured fast and reliable predictions by combining traditional ML models with a deep learning FNN, balancing interpretability and performance.