

Experience

Openstream Technologies

Data Scientist

Oct 2023 – Current

Bangalore, KA

- **Zero Shot Classifier Distillation:** Used zero-shot classifier distillation to train a student model for **predicting custom classes** efficiently by distilling knowledge from a **zero-shot NLI-based model**.
- **Prompt Engineering: Fine-tuned prompts** for Llama 3.1 language model, improving processing time of user responses by 30% and optimizing performance for various NLP tasks.
- **Real Time Agents:** Designed and implemented real-time virtual assistants using **LangChain agents**, capable of **performing web search** to fetch and provide up-to-date information.
- **Knowledge Base Integration:** Integrated **RAG systems** with domain-specific knowledge bases using **Chroma vector store**, enabling efficient vector search and customized content generation, leading to a 20% improvement in user query resolution accuracy.
- **Real-Time Audio and Video Streaming:** Designed and implemented a live streaming architecture using **WebRTC** and **Flask**, achieving a 40% reduction in latency and significantly improving audio-video synchronization. Used **Redis** for efficient storage and retrieval of streamed images and audio.
- **Multi-Modal Analysis for Personality Profiling:** Created and deployed a high-accuracy user personality detection service utilizing deep learning models for integrated **audio-visual analysis**, reaching a 95% profiling accuracy and a 15% reduction in processing time.
- **User Emotion Analysis:** Developed a cutting-edge, real-time emotion detection system using computer vision techniques such as **MTCNN** and **fine-tuned audio-visual models**. Improved the classification accuracy by 20%, processing over 100 video streams daily for comprehensive emotion state analysis.
- **Chatbot Development and Client Customization:** Managed and **tailored chatbot frameworks** to meet diverse client needs, leading to a 40% reduction in client support inquiries and seamless integration across multiple platforms.
- **Multilingual Support:** Researched on various models for language translations like NLLB, and optimized them for faster inference.

Projects

RAG Based Data Extraction

- Streamlined text extraction and interaction using Python and LangChain for document segmentation. Leveraged Sentence Transformers for embedding generation and Chroma for effective data retrieval.
- Enhanced system interactivity with advanced language models, integrating Retrieval-Augmented Generation (RAG) for improved document search and response accuracy.

Book Buddies

- Implemented a book recommendation system using Python with NumPy, Pandas, and K-Nearest Neighbor (KNN).
- Deployed the service on AWS EC2, ensuring seamless user interaction and optimized system performance.

Education

IIIT, Bhubaneswar

Master of Technology (M. Tech.) in Computer Science

Sep 2021 – May 2023

GPA: 9.36/10

Siddaganga Institute of Technology, Tumkur

Bachelor of Technology (B. Tech.) in Computer Science

Aug 2016 – May 2020

GPA: 8.68/10

Skills

Machine Learning, Deep Learning, Computer Vision, Scikit-learn, LLM, GCP, Python, Data visualization, TensorFlow, NumPy, Flask, Django, Pandas, Git, Linux, SQL, Data analysis, NLP, Jira, PyTorch, \LaTeX , MySQL, PostgreSQL, Gen AI, APIs.

Certifications / Publications

- [1] Moirangthem Gelson Singh et al., "Neuro-oncological Investigation of MGMT and Overall Survival of GBM Patients using Parallel Deep Learning Framework and MRI", IEEE Transactions on Artificial Intelligence (communicated).
- [2] Google Cloud Big Data and Machine Learning Fundamentals