

Venkateshwar Reddy Darmanola

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Skills

C/C++, Java, Python, SQL, C#, HTML, CSS, JavaScript, RAG, LangChain, LangGraph, AI Agents, Chatbots, LLM, Llama3, PyTorch, Kafka, CUDA, PySpark, Scala, MLOps, ETL, Java Spring, Microservices, Maven, GIT, AWS, EC2, S3, SageMaker, Machine Learning, Neural Networks, TensorFlow, ScikitLearn, OpenCV, Pandas, matplotlib, HuggingFace, Diffusion models, Transformers, GCN, Virtual Reality, Unity3D, Blender, React, NodeJS

Work Experience

University of Texas at Arlington | Texas, USA

Jul 2023 - May 2024

Graduate Research and Teaching Assistant

- Developed a VR video recommendation system using PyTorch and a graph-learning based model, achieving a significant improvement (over 68% in recommendation precision) compared to state-of-the-art approaches.
- Co-authored a research paper accepted for publication at the prestigious ACM MobiCom conference (average acceptance rate of 14.7%).
- Leveraged Docker to create consistent and isolated development environments
- Demonstrated strong problem-solving and analytical skills by independently designing and implementing a comprehensive VR application from scratch, meeting all project requirements and delivering the project ahead of schedule.
- Collected data from 58 participants, each viewing 50 short videos.
- We developed adaptive bitrate streaming for VR integrating human factors to prioritize higher video quality during points of interest in a video to improve the overall QoE.
- Tech stack: DOCKER, PyTorch, Python, Pandas, C++, C#,Unity.
- Worked as TA for Design and Analysis of Algorithms class and Introduction to Probability and Statistics class.

Accenture | Telangana, India

Aug 2021 - Jul 2022

Fullstack Software Engineer

- Used JAVA and frameworks such as Spring-MVC, Spring boot, Hibernate, JUnit, and Mockito to develop new functionalities, fix existing defects, and perform unit testing in an Airplane Cargo Management project, catering to esteemed airline clients.
- Developed and maintained interactive user interfaces using React, significantly improving user experience.
- Wrote SQL queries to retrieve and update the tables in the database.
- developed and maintained microservices.
- used GIT and JIRA for everyday version control and project management tasks.
- Worked on XML HTTP requests and responses.
- Tech stack: JAVA, SQL, Java Spring, MVC, Junit, XML, JSON, Shell scripting, GIT, JIRA, Maven.

Project Work

AI agent for diet

Using LangChain, designed an AI agent chatbot to analyze and assist users using diet data stored in a PostgreSQL database. The AI agent can retrieve and process dietary information through various tools, including date-specific queries and custom SQL executions. Additionally, a user-friendly interface, built with Express.js, provides RESTful API endpoints to add, retrieve, update, and delete user meal records. The AI agent intelligently interacts with this database, ensuring accurate and responsive dietary tracking, while the UI facilitates seamless data management in real-time.

Automatic YouTube Shorts generator

Developed an automatic YouTube short video generator using AI. The content, images, and voice are generated using LLMs, Diffusion models, and text-to-speech models from the Huggingface hub.

Breast Cancer Detection

Used Pytorch to train extended VGG11 vision model on CBIS-DDSM dataset to classify breast cancer into 3 classes. After training on A100 GPU for few hours, the trained model accuracies were Train Accuracy: 71.34% , Validation Accuracy: 74.30%.

Virtual Reality based Earth/Moon explorer

Developed a Virtual Reality (VR) application in Unity 3D using C# to explore Earth/Moon in VR. Used REST API to get geospatial data (height maps) of Earth and the Moon from usgs.gov, and converted the geospatial data into 3D models within the application. People can visit almost any place on Earth and the Moon in VR.

Diffusion model to generate faces

Created a diffusion model using the Huggingface Diffusers library. Trained a UNet2D model from scratch on the MetFaces dataset using Google Colab Pro to generate human faces resembling works of art.

Automatic Job applications

I am using LLMs and webdriver to apply to jobs automatically. The LLM reads the source HTML and screenshot of the webpage to identify what needs to be filled. I am sending random keys into text fields to identify which text field corresponds to which information. (for example, I send xyz to "first name" field, I ask the LLM what is the text within "first name" field, based on that we can map the input field to 'first name' dictionary entry, which contains my first name, I send the correct key now). Predefined questions are given to LLM and I process the responses to fill my details in a job application.

Education

University of Texas at Arlington | Texas, USA

Aug 2022 - May 2024

M.S. in Computer Science GPA: 3.9/4.0 Specialty areas: Big Data and Machine Learning

Bharat Institute of Engineering and Technology | Telangana, India

Aug 2017 - May 2021

B.Tech in Computer Science GPA: 7.3/10