Ajsal Ali

ajsalali2005@gmail.com 9995283347 AjsalAli

Education

Course	Institute	Score	Year
Bachelor of Technology	Indian Institute of Technology Kharagpur	CGPA: 8.01	2027
XII standard	Govt Model High School,Mananchira	98%	2023
X standard	Bee Line Public School Kuttikattoor	95.6%	2021

Projects

Real-Time AI Chatbot *LangChain, Streamlit, Groq, Pinecone,Python,PyTorch*

- Engineered an advanced real-time AI chatbot powered by **Llama 3**, enhancing user engagement through conversational interactions and **web search capabilities**.
- Implemented **hybrid search**, enhancing query precision and response speed through advanced retrieval and embedding techniques.

AI/ML-Powered Feature Extraction from Remote Sensing Data *Tensorflow,CNN,YOLO*

- Developed a robust DL framework for extracting features from high-resolution satellite images, generating tags, bounding boxes, and segmentation masks.
- Utilized YOLO and U-Net architectures with custom loss functions to enhance bounding box detection and segmentation performance.

Gesture controlled drone(Ongoing) *Python, OpenCV, MediaPipe, ROS, ArduPilot*

- Developed a gesture-controlled drone system utilizing MediaPipe and OpenCV for real-time gesture recognition.
- Integrated ROS and ArduPilot for communication and control, conducted simulations in Gazebo and Mavros.

Path planning algorithms *Python, OpenCV*

- Implemented RRT, A*, DFS, BFS, and PRM algorithms for path planning on IIT Kharagpur map and maze.
- Visualized the pathfinding results using OpenCV, showcasing the effectiveness and efficiency of each algorithm .

Face mask detection *Tensorflow, Python, Keras*

- Trained a CNN model to detect whether a person is wearing a face mask or not.
- Applied the model for real-time mask detection in video streams.

6 **Anomaly detection in time series forcasting using Autoencoders** (ongoing) *Python, Tensorflow, LSTM*

- Developing an anomaly detection system for time series forecasting using LSTM Autoencoders in TensorFlow.
- Trained the model to identify anomalies in sequential data by learning normal patterns and detecting deviations.

Game of life *python, OpenCV*

- Created an advanced simulation of Conway's Game of Life on a hexagonal grid, addressing challenges in grid generation and state management.
- Employed various rules to develop unique algorithms and used OpenCV for dynamic visualizations of the simulation.

Experience

AI Intern, Arkham Archives(ongoing)

- Currently building a sophisticated **AI-powered search engine** to enhance information retrieval and user experience.

Associate Quantitative Researcher, Quant Club, IIT Kharagpur.

- Gained insights into derivatives pricing and financial instruments through technical and fundamental analysis.
- Explored AI/ML in quantitative finance and studying probabilistic processes, including anomaly detection in financial data.

Perception team member, Aerial Robotics Kharagpur (ARK)

- Integrated advanced computer vision for drone perception, implemented gesture control algorithms, simulating with Gazebon and developing a gesture-controlled drone that utilizes computer vision techniques for enhanced user interaction and navigation.

Technical Skills

Languages: Python, C/C++
Technologies/Frameworks: Tensorflow, Keras, PyTorch, Pandas, OpenCV, Web scraping using BeautifulSoup, Google's MediaPipe, matplotlib, seaborn, sklearn, sympy, Numpy, yfinance, Arduino, TinkerCAD, LangChain, Streamlit, Pinecone VectorDB,Retrieval-Augmented Generation (RAG), Multimodel RAG,MLLM.

Relevant Coursework

Specialization in Machine Learning, Neural Networks and Deeplearning,CNN, NLP, Winterschool of AI and Robotics, Summer of Quant,Summer Analytics 2024, Multimodel RAG: chat with video.