Shrutakeerti Datta
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Education

• Institute of Engineering and Management, Kolkata 2022-26
B.Tech,CSE-IoT CGPA:9.05

Experience

Indian Institute of Technology, Jodhpur 15/05/2024-15/07/2024
Research Intern- Data Science Jodhpur, Rajasthan

– Developed an advanced Eye Gaze Tracking and Pupil Size Detection System with Hough Circle Transform and Dlib's Facial Landmark Detection for initial eye and pupil detection, along with the Starburst algorithm and Active Shape Models (ASMs) for precise pupil size measurement

– Utilized Kalman Filters for predictive smoothing, explored CNN-based approaches such as iTracker, GazeNet, Eye- Net, and OpenFace for robust gaze estimation and comprehensive facial landmark tracking. Integrated into an app, delivering real-time, insightful analysis applicable in accessibility, healthcare, and user experience research.

IEM IEDC Research Lab 03/10-Present
Junior Researcher Kolkata

– Developed an advanced insect detection system for farmlands using state-of-the-art computer vision algorithms. Implemented Convolutional Neural Networks (CNNs) like YOLO and Faster R-CNN for real-time insect detection and localization, alongside feature extraction methods such as Scale-Invariant Feature Transform (SIFT) and Local Binary Patterns (LBP)

– Integrated ensemble learning techniques including Random Forest and Gradient Boosting to enhance classification accuracy across diverse insect species and environmental conditions. This system enables early pest detection and proactive management strategies, contributing to improved crop protection and agricultural sustainability.

Projects

· SignSync: Bridging the Gap for Hearing and Speech Impaired Individuals
Repository

– Developed SignSync, an inclusive platform for the deaf and mute community, featuring community forums, real-time discussions, and a sign language learning section
– Implemented a video calling feature with real-time sign language to text translation using CNNs, LSTM, RNNs, and Transformermodels.TechnologiesusedincludeReact.js,Node.js,MongoDB,WebRTC,andTensorFlow.js.

Celebrity Look Alike
Repository
– Developed a machine learning model that identifies users' celebrity doppelgängers using Kaggle's CelebA dataset and VGG Face. The model leverages advanced facial recognition technology CNNs for image processing and feature extraction

– PCA for dimensionality reduction,SVMs for classification, and FaceNet for face embeddings. Additional techniques such as k-NN and HOG were also utilized to enhance accuracy and performance.

SentimentLens: Analyzing Movie Reviews with Deep Learning
Repository

– Developed a sentiment analysis model using the IMDB dataset containing 50,000 movie reviews. This project involved extensive data preprocessing, including text cleaning, tokenization, stopword removal, and stemming, followed by feature engineering with TF-IDF vectorization. Utilizing Python and libraries such as Pandas, NLTK, and Scikit-learn, I built and trained a neural network model with Keras, achieving a high accuracy rate.

– The process included visualizing data distributions with Matplotlib, Seaborn, and Plotly, and creating word clouds to identify common terms. The model's performance was rigorously evaluated, and hyperparameters were fine-tuned to ensure reliability.

- HealthPredict: AI-Powered Disease Prediction System 10/01/2024-11/03/2024

Repository

- Developed an advanced disease prediction system and web application using Python, leveraging machine learning algorithms such as Logistic Regression, Random Forest, SVM, and Gradient Boosting.
- Integrated the system with a user-friendly interface using Streamlit and developed the application in Spyder, enabling real-time disease predictions based on user input data.

Technical Skills

Programming Skills:Python, JavaScript, ReactJS, C, C++,Java, HTML, CSS,Matlab
Technology:Data Science, Machine Learning, Deep Learning Natural Language Processing, Computer Vision,Large Language Models, Image Processing
Miscellaneous:Git/GitHub, Linux, Bash

Certifications[*- Ongoing]

Data Visulations with Python, Deep Learning Concepts,Machine Learning Foundations, Statistics and Probability, Computer Vision in details, ML learnings in contextual form*,Image Processing with Algorithms, Statistical NLP*