Marwadi University
Faculty of Technology
Department of Information and Communication Technology

Project Title: Sign Language To Text & Speech Converter
Team Members:

1. Mayurdhvajsinh Jadeja (Sem - 6, ICT)
2. Pushti Depani (Sem - 6, ICT)
3. Shantanusinh Parmar (Sem - 2, ICT)

Mentor Details:

1. Prof. Chandrasinh Parmar (HOD , ICT)
2. Prof. Nishith Kotak (Assistant Professor, ICT)

Abstract: The project aimed to create a real-time sign language recognition system using Mediapipe for detecting hand, face, and body landmarks, OpenCV for data collection, and Tensorflow.keras for LSTM model training. However, the team faced accuracy issues when adding more signs. They collected a new dataset of commonly used Indian signs and achieved 91% accuracy after training the LSTM model. For real-time recognition, OpenCV was used to pass detected landmarks to the predict function, and the predicted sign was displayed on the screen and converted to speech using pyttsx3 library.
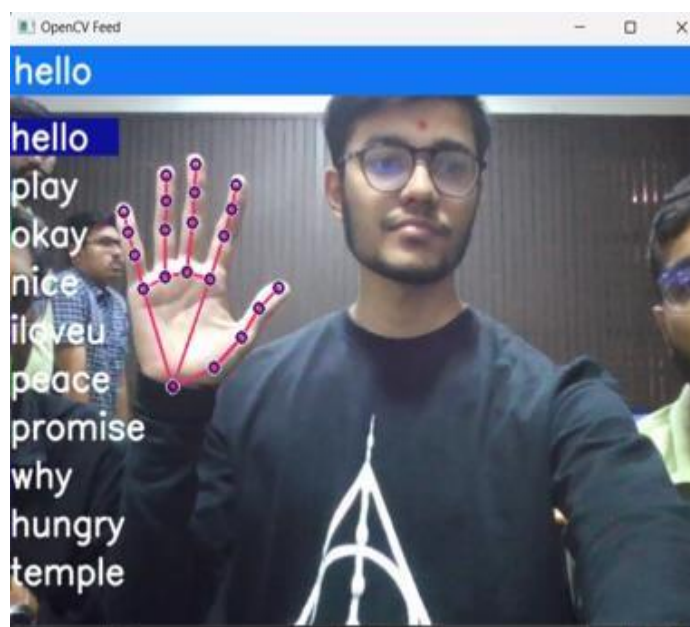
Idea/prototype/Solution:

To further improve the sign language recognition system, there are several proposed ideas worth exploring. Firstly, deep learning techniques such as CNNs and RNNs could be integrated to enhance the system's accuracy.

A mobile application could be developed for real-time interpretation, providing a more accessible communication tool between deaf and hearing communities.
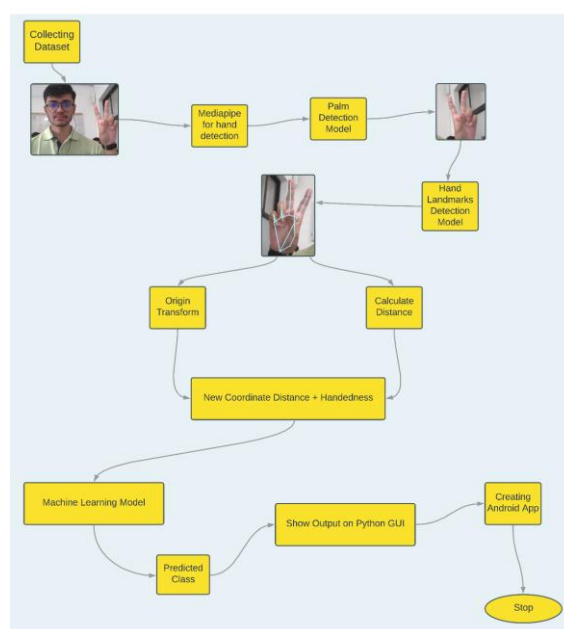
Additionally, incorporating translation features in different languages could make the system more versatile, and training on more diverse datasets could improve its accuracy and inclusivity.

These proposed ideas hold significant potential for making the system more effective and useful, ultimately improving the quality of life of the deaf community.

Block Diagram/Flow Chart:

Initial Results

Target Community:

The target community for this project is individuals who are deaf or hard of hearing and rely on sign language to communicate.

The sign language recognition system aims to bridge the communication gap between deaf and hearing communities, making it easier for them to interact with each other.

For more information:

https://github.com/MayurdhvajsinhJadeja/Sign-to-Text-Converter