Real – Time communication System powered by AI for Specially Abled

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Github Link: IBM-EPBL/IBM-Project-11148-1659270620: Real-Time Communication System Powered by AI for Specially Abled (github.com)

Proposed Solution – Sign Language Recognition :

Sign language is the mode of communication which uses visual ways like expressions, hand gestures, and body movements to convey meaning. This is extremely helpful for people who face difficulty with hearing or speaking.

Sign language recognition refers to the conversion of these gestures into words or alphabets for deaf people of existing formally spoken languages orgestures into audio for blind people. Thus, conversion of sign language into words or audio by an algorithm or amodel can help bridge the gap between people with hearing or speaking impairment and the rest of the world.

The proposed system consists

1.Extract Media pipe Holisitc Keypoints

2.Build a Sign Language Model using a Action Detection powered by LSTM layers

3.Predict sign language in real time using video sequences

In this model we are able to leverage a keypoint detection model to build a sequence of keypoints using Media pipe holistic .One of the main usages of MediaPipe holistic is to detect face and hands and extract key points to pass on to a computer vision model. After Extracting Keypoints , train a deep neutral network with LSTM layers for sequence. And then Perform Real time sign Language detection using OpenCV. Save Model weights and evaluating using confusion matrix. Using Google speech API convert context (output) into speech .