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| Date | 17 October 2022 |
| Team ID | PNT2022TMID47570 |
| Project Name | Real-Time Communication System Powered by AI . |
| Maximum  Marks | 4 Marks |

**Solution Architecture**

Solution architecture is a complex process – with many sub-processes – that bridges

The gap between business problems and technology solutions.

• Technology used are PYTHON, JUPYTER,NUMPY ,OPENCV ,KERNAL

TENSORFLOW, GTTS.

• Methodology - We start by collecting key points from media pipe holistic

& collect a bunch of data from key points i.e., our hands, on our body

&on our face and save data in the form of NUMPY arrays. We can vary

The number of sequences according to our need but each sequence will

Have 30 frames.

• We then build a LSTM model and train with our stored data which helps

Us to detect action with a number of frames.

• The number of epochs for the model is determined by us, if we increase

The number of epochs the accuracy increases but time taken to run the

Model also increases and over fitting of model can happen, for gesture

Recognition.

• Once training is done, we can use this model for real time hand gesture.

Detection and simultaneously convert the gesture to speech or text using OPENCV.

**Solution Architecture**

Hand gestures, Facial expression.

Capture video.

Divide the video into frames

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Image processing.

**DATASET**

Build and train the LSTM deep learning model

Output text

Google text in to speech.

Output Audio.