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.

Build and train the LSTM deep learning model

DATASET

Output text

Google text in to speech.

Output Audio.