

# SCRIBEE!

TEAM NO.:362

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## **Project Details:**

What our team proposes is a system that can convert spoken words or written text to Braille and print the same. This makes everything readable for the deaf and blind, thereby making their lives simpler.

## **Problem Statement:**

To meet the acute shortage of textbooks, novels, guides etc written in Braille script, especially text which is transcribed indirectly. Also, to create a Sign Language translation tool, which could be used to teach people Sign Language as well.

## **Need of Project:**

Scribee! serves a very important purpose, which is to bridge the gap between specially-abled people and modern society. It will help them stay up to date with the latest trends in education, politics, etc.

## **Proposed Solution:**

This system is unique in the sense that it provides a two-way approach. It not only helps differently-abled people understand spoken words and printed texts, but also allows normally-abled people to learn braille script and sign language so they may be of help to the deaf and blind.

## **Technology Used:**

The technology used for this project is streamlit, assembly ai, opencv, mediapipe, tensorflow, python.

## **Project Outcomes:**

For the first part of the project we converted speech to braille language ,the speech is either recorded or uploaded in waveform.For the second part the webcam captures the hand signs shown by the person and displays the result accordingly,it also uses an autocorrect feature which shows the possible correct word.

## **Modelling:**

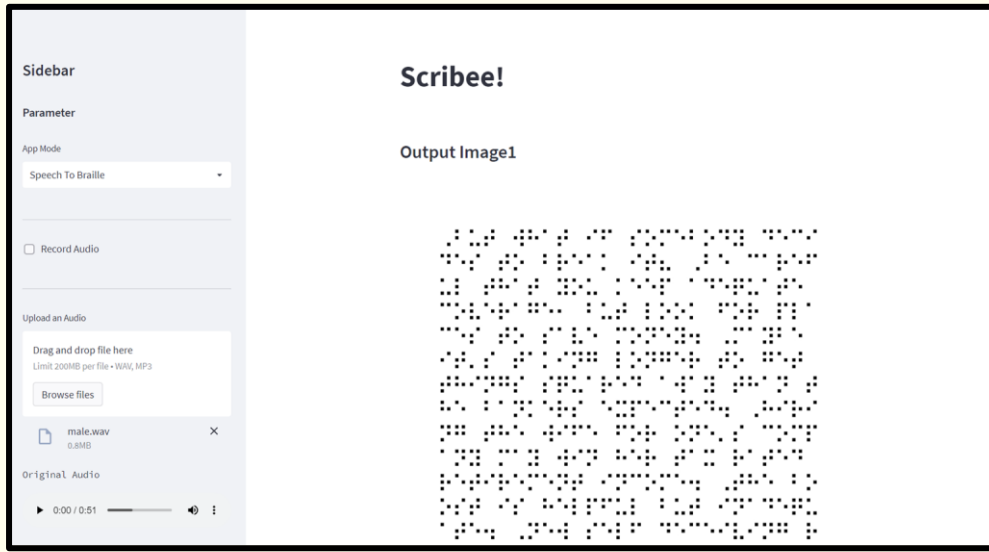
### **Speech Recognition Modelling uses 3 steps:**

- 1] Word Sense Disambiguation: Distinguishes a word meaning from multiple possibilities.
- 2] Speech Tagging: Discerning between a noun or verb regarding the same word.
- 3] NLP: Changes structured information into human language.

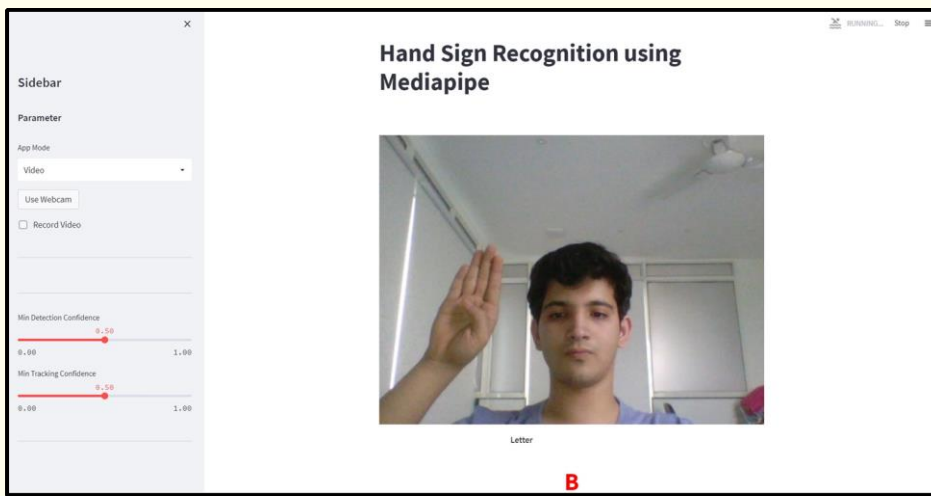
### **Hand Sign Recognition Modelling uses 3 steps:**

- 1] Open Cv: Used for collection data and detection of signs using our webcam
- 2] Media Pipe Holistic: Used for pointing landmarks on our hands and storing them in arrays.
- 3] LSTM Model: LSTM Model is used to train the model from the different points collected to give an output that classified as one of the Letters in the English Alphabet.

## Results:



Here, we have the audio first converted to text, followed by the text being converted to Braille.



Here we see the Hand Sign been shown and the corresponding letter being printed.

## **Future scope for project enhancement:**

The future scope of this project is

- 1) To add the ability for the user to speak in multiple languages and get their respective braille scripts.
- 2) Also to allow the user to Sign in different languages i.e. other than ASL
- 3) Also to deploy and create a website for better use.