Report On

AUDIO/TEXT TO SIGN LANGUAGE TRANSLATOR

By

Manav Kawale (Roll No. 27)

Dinesh Madhav (Roll No. 29)

Sakshi Dagur (Roll No. 58)

Mentor
Prof. Ronak Joshi

University of Mumbai

Vidyavardhini's College of Engineering & Technology
Department of Computer Science and Engineering (Data Science)

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Vidyavardhini's College of Engineering & Technology

Department of Computer Science and Engineering (Data Science)

CERTIFICATE

This is to certify that the Mini Project entitled **"AUDIO/TEXT TO SIGN LANGUAGE TRANSLATOR"** is a bonafide work of **Manav Kawale (Roll No.27) Dinesh Madhav (Roll No.29) Sakshi Dagur (Roll No.58)** submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of **"Bachelor of Engineering"** in Semester VII of Third Year **"Computer Science and Engineering [Data Science]"**

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Prof. Ronak Joshi
Mentor

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Dr. Vikas Gupta
HOD CSE(DS)

Contents

ABSTRACT

Deaf individuals usually lose out on the enjoyment that hearing people have, whether it's conversation, computer games, attending seminars or video conferences, and so on. Communication is the most challenging challenge they confront with ordinary people, since most ordinary people do not know sign language. The primary goal of this project is to transform user input to sign language. Natural Language Processing (NLP) is used to categories text/speech into tiny parts. Then, from the database, search for words/letter. Finally, show the relevant ISL graphics or gifs to the user. The use of this technique facilitates communication between hearing and deaf persons.

This application will successfully and accurately convert the user's text input into sign language so that they may communicate effectively. A feedback system is also provided for regular feedback for future updates.

1.1 Introduction: -

It is said that Sign language is the mother language of deaf people. This includes the combination of hand movements, arms or body and facial expressions. There are 135 types of sign languages all over the world. Some of them are American Sign Language (ASL), Indian Sign Language (ISL), British Sign Language (BSL), Australian Sign Language (Auslan) and many more. This system is using Indian Sign Language in this project. This system allows the deaf community to enjoy all sort of things that normal people do from daily interaction to accessing the information.

This project also has an quiz page in which one can evaluate himself by taking the quiz and testing his/ her knowledge

1.2 Problem statement : -

The primary goal of this project is to transform user input to sign language. Natural Language Processing (NLP) is used to categories text/speech into tiny parts. Then, from the database, search for words/letter. Finally, show the user the relevant sign or gestures. The system has the following issues:

1. Only text to sign language is available.
2. Limited dictionary word so rest words are translated letter by letter.
3. Language limitations
4. Animated videos are not available for sign language

Objective: -

Software aims at developing a Audio/Text to Sign Language, The system aim to generate reliable and user friendly translator/converter for the user. This product can be used for training as well as educational purpose.

1.3 Scope : -

- To make communication with the deaf community easy.
- To provide accurate results with proper video output.
- To convert speech to Indian sign language in real time.
- Various front-end options are available such as .net or android app that can be used to make the system cross platform and increase the availability of the system.

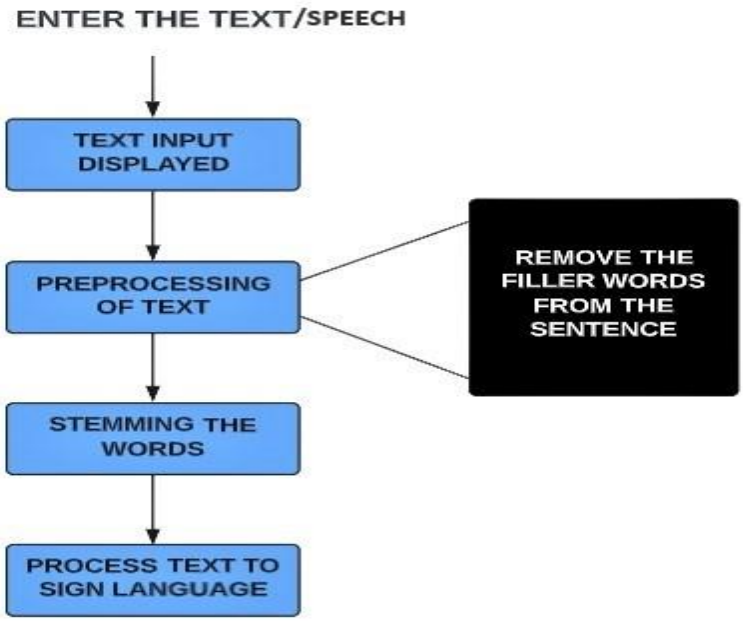
2 Proposed System :-

2.1 Introduction

The goal of this project is to translate a text message into sign language. The system accepts text as input, and then displays the appropriate GIFs or clips in Indian Sign Language that has been specified. The communication between hearing persons and the deaf is made simpler by the use of this technology. The demand for improved systems that can deliver the greatest outcomes is increasing as technology advances, and this study has opened up enormous potential for voice to sign language.

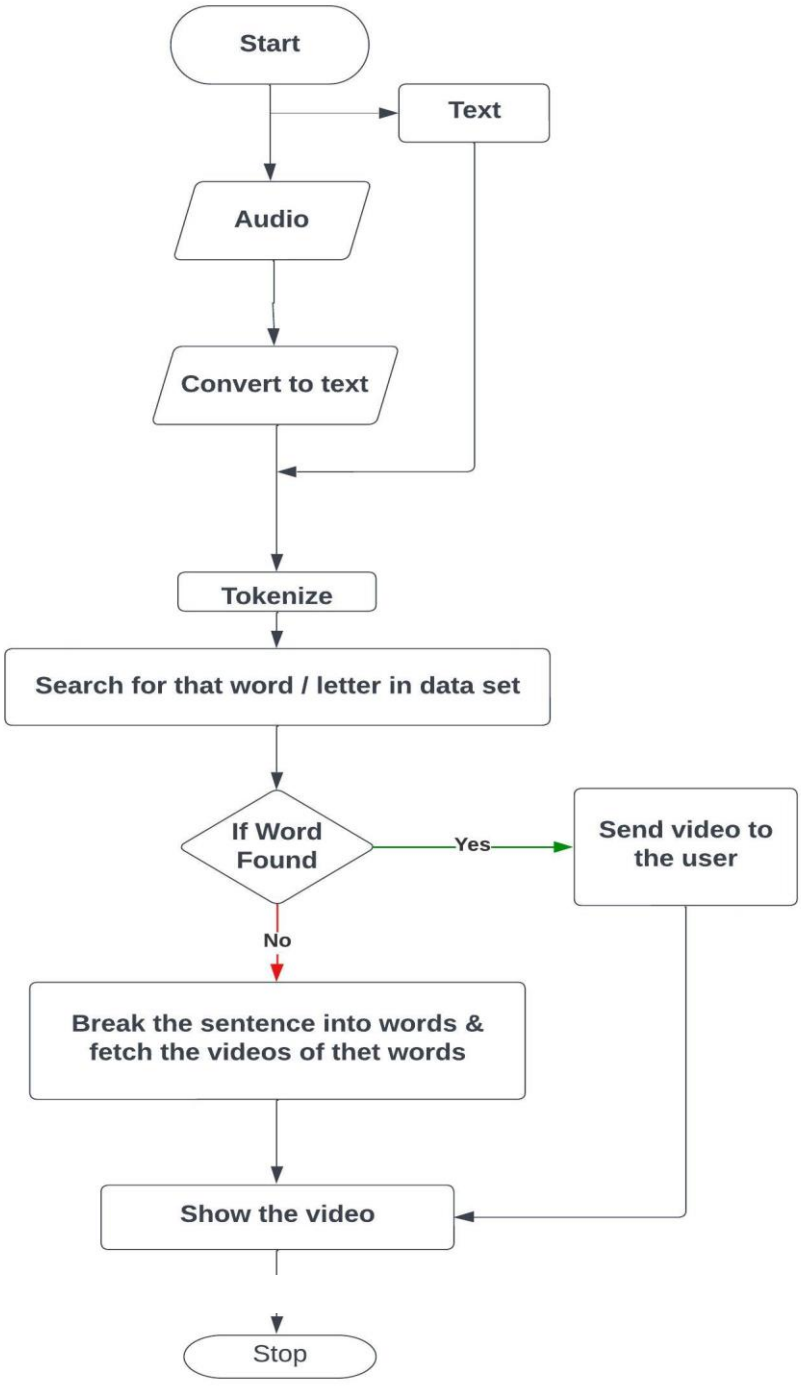
The target audience for this system is not just hearing-impaired people because communicating with hearing-impaired people in public places like banks, hospitals, train stations, and bus stops can be very challenging because a vocal person may not understand sign language and thus be unable to communicate with them. In order to improve communication, it is thus directed at everyone who wants to learn this translation.

2.2 Block diagram :-



(Fig 1.1)

Process Design



(Fig 1.2)

2.3 Details of Hardware & Software

❖ **Hardware:-**

- RAM ;- 500MB+
- Disk space:- 246 MB
- Laptop/PC
- Mic and Keyboard
- Internet/LAN

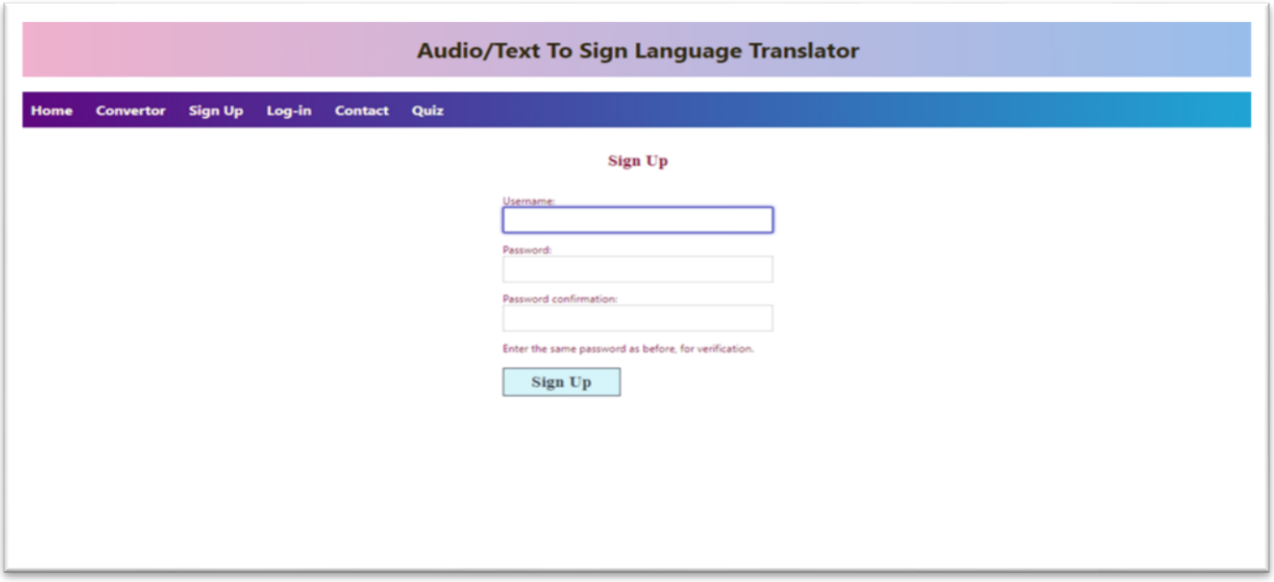
❖ **Software:-**

- Windows :- at least 7+
- Mic and Keyboard
- Python programming language
- Django Framework
- VsCode or PyCharm IDE

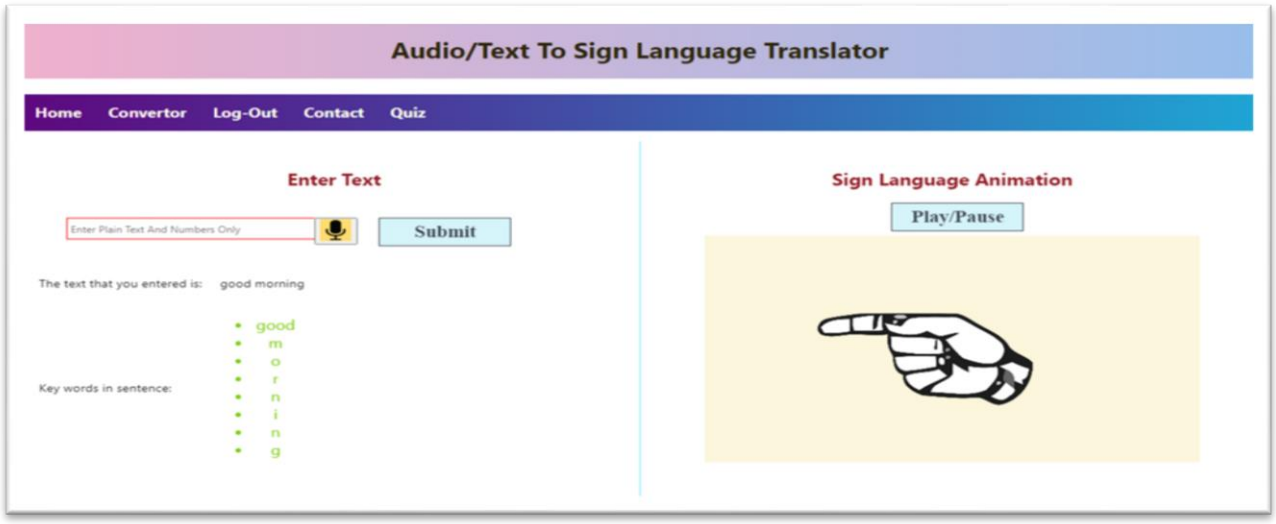
2.4Experiment and Results for Validation and Verification

Snapshots :-

Screenshots of Home page



Screenshot of Sign UP page



Screenshot of Convertor page

Conclusion

From the performance of the current system it can be evaluated that the accuracy of the text to sign is 100% as there is involvement of searching algorithm only whereas in audio to text & text to sign it is found that the accuracy is variable due to surrounding factors and microphone quality.

The time is reduced as this is a hybrid system consisting of dual output which also gives dual benefits.