Swar-“A Voice of Disable”

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Abstract— In the real world its very troublesome to exchange the views and thoughts of deaf or dumb to others without knowing the sign language[3]. To overcome this problem here we are introducing an android application - “Swar-a voice of disable” which aims at reducing the communication gap of deaf and dumb with other people and to increase the opportunity in the competitive world.

Keywords— Android Mobile, Deaf and Dumb, Gesture [2], Image Processing, Sing Language.

I. INTRODUCTION
The project “Swar-A voice of disable” deals with the problems faced by deaf and dumb people to interact with the other person and vice versa. So to defeat these problems we took a challenge and developed an application with the below mentioned features like:

- Speech to Text [4]
- Gesture to Text
- Text to Template
- Manual

This project will help both deaf, dumb and also others to communicate without any hesitation. Which will increase their opportunity to get employed in different companies and to share their feelings with their near and dears once who doesn’t know sign language.

II. LITERATURE SURVEY
The Deaf and Hearing Impaired – Is an android application which is used for alerting the deaf or dumb by vibration and flash of mobile phone. When there is any difference in modulation that will be sensed by the system and it will alert the deaf or dumb. It also include another feature like converting speech into its equate text.

[6]Real-time Vision-based Hand Gesture Recognition Using Haar-like Features used hand gloves to understand the gestures according to the frequency matched with the fingers.

III. METHODOLOGY
In this application there are four modules which will be beneficent for reducing the communication barriers among the deaf or dumb and others.

A. Speech to Text
A person can record there speech and converts it into corresponding text, so that it would be useful for the deaf or dumb to understand which help the user to reduce the load of typing.

B. Gesture to Text
Here deaf or dumb person will use their sign language which will be recorded by our system camera and convert it into corresponding text for other person.

C. Text to Template
In these feature we give some text and it will give the corresponding template.

D. Manual
This will help to learn about the sign language within a couple of time.

IV. IMPLEMENTATION
This application consists of different modules which will be helpful for completing project. And the time duration is dependent on the nature of modules.

Phase 1: It contains design model, database design and documentation.

Phase 2: It contains connectivity of database, home page, and login for an admin.

Phase 3: It consist of modules like Speech to text, Text to Template, Gesture to text and Templates.

Phase 4: It contains feedback and module implementation.

This project is implemented by using android studio a software developing application by making use of the inbuilt functions and methods, beside that there is also use of xampp server which will be used for storing and retrieving the data from database. Image processing techniques are used to process the images and videos.
The implementation of the application begins with developing an android first page and home page. Besides these, the Manual page consists of an onclick event which will lead to another activity resulting into the list of gestures for understanding the sign language.
Speech to text works in the following manner: the speech which is recorded is taken as input and these words are sent to the server which uses Google API's for conversion of speech words into the corresponding text.

Gesture to text basically follows image processing techniques of converting video in the frame according to required frame rate and matches the given image by the image in the database and gives the appropriate text[5].

There are different inputs and their respective outputs according to the input.

<table>
<thead>
<tr>
<th>Application Features</th>
<th>Input by the user</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech to Text</td>
<td>Speech will be taken as an input.</td>
</tr>
<tr>
<td>Gesture to Text</td>
<td>A video will be recorded and split them into frames and that frames will be taken as input.</td>
</tr>
<tr>
<td>Text to Template</td>
<td>A text typed by the user from system keyboard will be the input.</td>
</tr>
<tr>
<td>Manual</td>
<td>The user’s choice</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application Features</th>
<th>Output of the System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech to Text</td>
<td>A suitable text corresponding to the speech will be displayed.</td>
</tr>
<tr>
<td>Gesture to Text</td>
<td>According to the frames it will find nearest image in a database and try to match the frame and gives appropriate text.</td>
</tr>
<tr>
<td>Text to Template</td>
<td>The template of gestures of the corresponding text will be displayed.</td>
</tr>
<tr>
<td>Manual</td>
<td>Images of the gesture as per the user’s choice</td>
</tr>
</tbody>
</table>

V. RESULT

There are different inputs and their respective outputs according to the input.

VI. CONCLUSION

By using the android application Swar the user can easily communicate with the deaf or dumb people without learning the sign language and besides this our proposed application will help deaf and dumb people to increase their confidence level by interacting with hearing people. This leads to the upliftment of their skills.

VII. FEATURE WORKS

We are thinking to add Multilanguage support to our proposed system application, beside this we will also create a web site which will help a user to get updated with different hearing technologies available in the market.
REFFERENCES


