

Ear Hear Using Sign Language

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Abstract- In this paper we proposed to develop an Android Application for deaf and dumb people to communicate with other people normally. The Sign Languages are used, which were generally used by the deaf people in their conversation. we present this project to mainly focus on aiding the speech impaired and paralyzed patients Initially, the Sign language is typed by the deaf person which is later converted into video to the receiver. Speech-to-sign technology and VRS is used that enables audible language translation on smart phones with signing feature in mobile without dialing number uses a technology that translates spoken and written words into sign language with video. Video interpreter is responsible for helping deaf or hearing-impaired individuals understand what is being said in a variety of situations. The main feature of this work is that it can be used to learn sign language and to provide sign language translation of video for people with hearing impairment.

Index Terms- Speech Recognition, Sign Language, Speech Translation.

I. INTRODUCTION

Communication plays an important role for human beings. Communication is treated as a life skill. Our work helps in improving the communication with the deaf and dumb. Speech-to-sign technology and VRS enables audible language translation on smart phones with signing and application has characters feature in mobile without dialing number uses a technology that translates spoken and written words into sign language with video. Before SMS/MMS, deaf people rarely used mobile phones. This application allows deaf people to communicate with both deaf and hearing person. This application includes a voice based, text based and video-based interaction approach. Video chat technology continues to improve and one day may be the preferred means of mobile communication among the deaf. Now a day a trend has promoted as to propose the use of android

application for better communication to everyone in the world. Our contribution mainly consists that automatic transformation of a textual message to an MMS containing the translation of the message's content by the sender is converted to sign language in the development of software module.



Fig1: Android application

II. GOAL OF THE PROJECT

The main goal of this paper is providing the bridge for deaf people and to determine the gesture recognition which enable the deaf to converse with the hearing people simultaneously and is done by a JSON interpreter. The first way to use cell phone by hearing or deaf person is the SMS (Short Messaging Service).SMS is preferred language for deaf is sign language (their first language). Our aim is to provide intermediated mobile communication between deaf

and hearing people. The mobile search functionality should recognize either ASL (American Sign Language) Text or voice (speech recognition) is convert it to both text message as well as video on respective input given. ASL2TXT is a sign language which enables finger spelling communication (signs displayed in the keyboard) take text and display video.

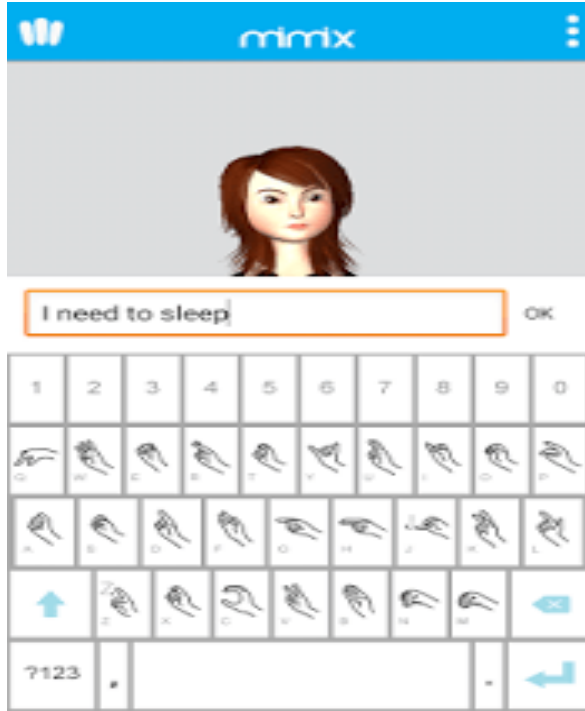


Fig 2: sign language keyboard

III. ADVANTAGES

- Majority of people can afford the smart phone since its cost it goes on decreasing due to availability of many brands with less cost.
- It does not require large amount of storage as it contains speech recognition.
- It helps other people to understand the deaf and dumb people with ease.
- The keyboard contains sign words as same as letters appear in English alphabets in normal keyboard.
- Has interpreter/translator's facility for communication between Deaf/Hard of Hearing and hearing people.
- It reduces the communication gap between the deaf and dumb people with the world (other people).

- Accurate and appropriate transfer of a message from a source language into a target language from the point of view of style and culture.
- For ASL users, VRS conversations flow so much more smoothly, naturally, and faster than communicating by typing.

IV. DEAF / HEARING COMMUNICATION

Deaf person communicates primarily using American Sign Language (ASL). Though some hearing people use both audible and sign languages. Here the term Interpreter refers an exception to a paid professional who intermediates Communication between deaf and hearing parties' Technical literature uses the term "translation" in favor of "interpretation,"

A. SIGN LANGUAGE INTERPRETER:

Sign language interpreter is responsible for helping the person who may be deaf or hearing-impaired individuals to understand what is being said according to different situations. An interpreter must understand the main message so he / she can accurately translate what is being spoken into sign language. Interpreters might use technology to provide services from a remote location. Whenever an opposite person in need of sign language interpretation, a sign language interpreter is needed.

There are mainly two parts:

- Speech-Recognition
- Recognized Text

For Speech- Recognition Engine we include Video Relay Service (VRS - enables audible language translation on smart phones with signing) technologies and Speech to Sign using Mimix technology. For database SQL lite database is used to store the inputs given by the user who registered in the application, the respective inputs can be viewed from the database. Finally, Text (or video) recognized through Mimix makes two-way communication with a deaf without having to know sign language.

SR system clustered according to three categories:

- Isolated vs. continuous
- Speaker dependent vs. Speaker independent
- Smaller vs. larger vocabulary

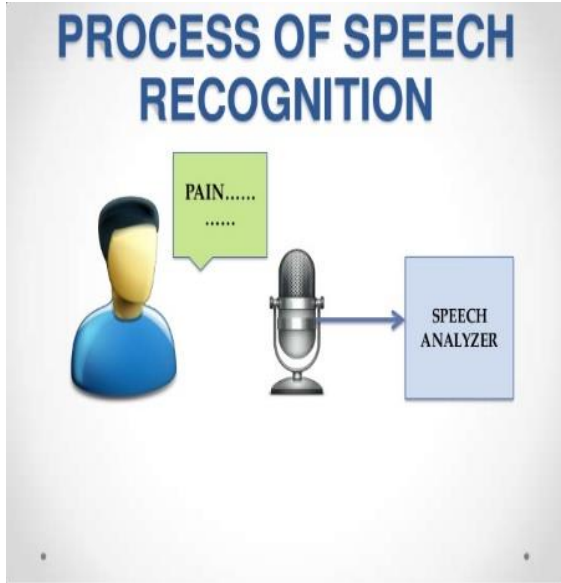


Fig 3: Speech Recognition

B. OPEN STANDARD:

The video interpreter is made to communicate between the participants who are located together at different side. It allows deaf, hearing and speech person to communicate over video or other technology via a sign language interpreter. The JSON format was originally specified by Douglas Crockford. This uses human-readable text to transmit data objects, hence used primarily to transmit data between a server and web application, as an alternative to XML.

C. VIDEO-RELAY SERVICES:

A video relay service (VRS) also called as video interpreting service (VIS), is a video telecommunication service that allows user to communicate over video telephones and similar technologies with hearing people in real-time, via a sign language interpreter. Deaf people can also communicate with others using mobile video chat through smart phones, tablet PCs. By using sign language, they can interact with others. This is achieved by using the resource hand speak implemented with the JSON technique. Video equipment translate via video remote interpreting (VRI) for sign language. Users access video by typing their text-string. ASL2TXT has ASL Dictionary, one which allows users to view gesture signs, then read text translates to audio/video file.

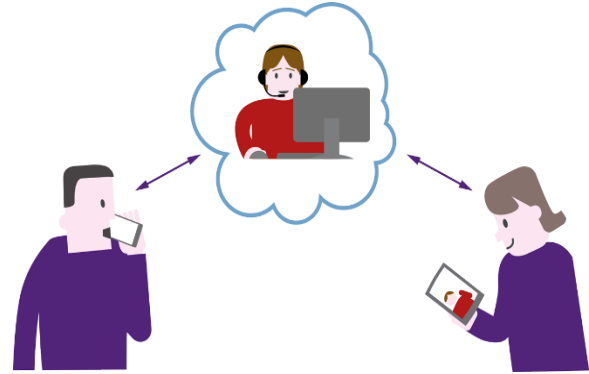


Fig 4: video relay service with relay operator

D. HUMAN INTERPRETER

Translation is the process of changing text message created in one language into another language. The ability of human interpreters to perform language translation may always exceed in compare to computer's ability. Other mobile devices, not as a replacement for human interpreters. ASL2TXT as an enhancement to smart phones than Human interpreter.



Fig 5: Human interpreter

V. MOBILE PHONES AND TEXTING

SMS/MMS can be used by both deaf and hearing parties for communication purpose. Now- a-days video chat becomes advanced technology for communication especially for deaf person. Researchers at the University of Washington are developing Mobile ASL to improve video chat capabilities on smart phones.



Fig 6: Mobile texting in Sign Language

VI. SIGN RECOGNITION

Basically, Sign recognition is a hardware and software that will impact the way deaf persons communicate and learn. American Sign Language (ASL) is a language consist of combination of facial expressions and postures of the body. Sign languages are based on useful tool for a deaf person to communicate and receive information. ASL signs have a number of phonemic components, it also includes movement of the face and torso as well as the hands. ASL is completely differ from English language, Has its own rules for pronunciation, word order, and complex grammar. In sign language recognition a video is displayed on the deaf party person with action and facial expression. Sign Language video is obtained from the JSON and the Hand Speak websites. These websites include most of the words from the ASL Dictionary. This can be implemented by giving a link to the particular web server. The request is given to that server and will hit that web server with get/post method, where the output is received as the String and converted to the video file.



Fig:7 Sign recognition

VII. PROCESS FLOW

- The user should register in the respective application.
- After the registration process, the user should login the login page by user name and password.
- The submitted password will be stored in SQL lite database.
- The deaf person types the message through sign language keyboard displayed with a text.
- Software translates signs into text and ASL video through interpretation process.
- The receiver person can view the message in terms of video format.
- The user can also speak into microphone which is recognized through Google server.
- Software translates voice (speech recognition) into text and ASL video interpreted through JSON (Java Script Object Notation).
- The respective video will be stored in the inbox.



Fig 8: Process flow of app

VIII. PROPOSED SYSTEM

- It is an application for the mobile phone which converts everything we say in a high-pitched voice and gets the required video from the server.
- The main part of this system which is communication between deaf is implemented using ASL video from server.
- The proposed system will pave way for the deaf person to easily interact with normal person from anywhere. This system also supports automatic translation, automatic speech recognition, and speech-to-sign and sign-to-speech transmission.
- The various technologies used in this system are divided into two main parts hardware and software. In hardware phone and speaker is used. In software outfit-7 and Video Relay Service (VRS) is used. They are brought together and integrated as a system.
- It can be used without dialing the number of the receiver as he is a registered user.

IX. FUTURE ENHANCEMENT

By using this application deaf people can communicate with normal people, they can be independent as like other people by interacting with everyone. In future journal Mimix, Outfit – 7, VRS on speech and Audio processing, computer speech and language are introducing with speech recognition and translation components.

X. CONCLUSION

Communication plays an important role for human beings. Communication is treated as a life skill. This application includes a voice based, text based and video-based interaction approach. Video chat technology continues to improve and one day may be the preferred means of mobile communication among the deaf. Technologies not mashed up to solve the problem of mobile sign language translation in daily life activities. Deaf people could gesture sign language into smart phone by using VRS which would produce audible and textual output. This application would help the deaf person to communicate with everyone.

REFERENCES

- [1] Sinora Ghosalkar ,Saurabh Pandey,Shailesh Padhra,Tanvi Apte, “Android Application on Examination Using Speech Technology for Blind People”, International Journal of Research in Computer and Communication Technology, Vol 3, Issue3, March-2014.
- [2] http://educationportal.com/articles/Sign_Language_Interpreter_Job_Description_Duties_and_Requirements.html
- [3] <http://www.googblogs.com/uncategorized/outfit-7stalking-friends-built-on-google-app-engine-recentlyhit-one-billion-downloads/>
- [4] Raghavendhar Reddy.B, Mahender.E, “Speech to Text Conversion using Android Platform”, International Journal of Engineering Research and Applications (IJERA) Vol. 3, Issue 1, pp.253-258, January -February 2013.