

A SPEAKING MODULE FOR DEAF AND DUMB USING ANDROID APP

N.Vinay Kumar

N.Rekha

M.Samhitha

V.Susmitha

Department of Electronics and Computer Engineering, SNIST, Ghatkesar, Hyderabad.

Abstract— Impair people find it difficult to communicate with the society. Sign language is the way through which deaf and dumb people interact with each other. Due to this disability, it is hard for them to cope up with the technology. Communication between deaf or mute with the normal people is a baffling task. To bridge this gap the proposed system acts as a mediator for the impaired and normal people. The project aims to enable individuals with a glove based flex sensor. The proposed method extracts features from sign through flex sensor and transmits the sign signal through Bluetooth module to the android mobile. Thus, the entire idea is implemented for flexible communication between speech-hearing and normal people.

Keywords: Flex sensor, Sign language, Bluetooth module

INTRODUCTION:

Deaf and dumb people use sign language to interact with one another. Sign language uses sign instead of sound to fetch information. In this communication system, deaf and dumb people who are having hearing diminish

and speaking disability respectively face a lot of challenges. In today's era technology plays a vital role and has been developed quickly. It tends to present each action in digital form whether it may be in image or audio format with the view to make their life more feasible, application would be required to develop so they can get a break to explore new things and can get an opportunity to commence new technology.

An electronic glove is drafted for impair so that they can communicate with accuracy. Over here only one hand is used, five flex detectors are utilized according to every square measure adjusted with length of using individual finger of glove. On every specific gesture they are decoded by microcontroller. It takes input from flex sensor and all the data is being sent to android phone via Bluetooth module, the person can view the message that displays on the android screen. The data can also be resulted in the voice form from the speaker that is been attached to the model. When normal people want to interact with the impair there is a app that converts speech to text.

LITERATURE SURVEY:

Communication is the act of conveying message or interacting with one another to deliver an individual thoughts and feelings. Interaction amongst the normal people has brought no complications, but the problem arises when the deaf or mute also called as the impaired people try to express themselves to other people with the help of these sign language grammars. This is because normal people are unaware of these grammars. As a result it has been observed that the communication of a dumb person is only limited within his/her family or the deaf community at this age of technology, there is a demand for the computer based system for the impair.

The purpose of the literature survey is to give the brief overview and also to establish complete information details related to the main project in a concise and unambiguous manner. There are many researches that have begun carried out in this research area. Oimean fong has discussed about sign language translation system using speech and image processing technique in "V2S: voice to sign language translation system for Malaysian deaf people"[1]. The advantage of this voice (English language) to sign language of Malaysia. Main disadvantage is system first needs to be trained with speech pattern based on some generic spectral parameter set.

"Sign language to speech translation system using PIC microcontroller" authored by gunasekarm and Manikanda.R[2]. Advantages were, system would give high reliability and fast response, more accurate one hand movement, different languages could be installed without altering the code and main disadvantage is manufacturing cost.

In [3] for past many decades designers have processed speech for a good style of applications starting from mobile communication to automatic reading machines with vast processing, algorithm and strategies we are able to method speech signals simply and acknowledge the text. The speech to text system directly acquires and converts speech to text. A speech-text system also can improve system accessibility by providing knowledge entry choice for blind, deaf or physically incapable users. Voice sums is an application developed this work that permits a user to record and convert spoke messages into SMS text message user will send messages to the entered number. Speech recognition for voice uses a method supported hidden Markova models, it is presently the foremost undefeated and most versatile approach to speech recognition.

EXISTING SYSTEM:

The main focus of the proposed framework is to build up acute design which can provide voice to voiceless individuals with the assistance of smart glove. It shows that with the help or use of these smart glove there won't be any miscommunication between two distinct groups and they will have the scope to discuss fluently. The glove is developed with flex sensors, contact sensors and accelerometer to estimate the flexion of the fingers and the turn of hand. With different signals, hand motion assumes an essential part, as it communicates the client's perspective in less time. The aim is to play out these mind blogging calculation and activities on the server and create the discourse on cell phones.

ALGORITHM:**1. Hidden-Markov Model(HMM)**

Hidden-Markova model are popular statistical models used to implement speech recognition technologies. The

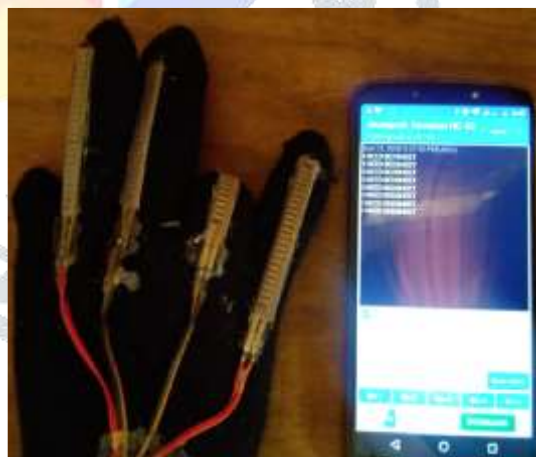
time variances in the spoken language are modeled as Markova processes with discrete state spaces. Each state produces speech observations according to the probability distribution characteristics of the state. The speech observation can take on a discrete or a continuous value. In either case, the speech observation represent a fixed time duration. The states are not directly observable, which is why the model is called the hidden Markova model. The original minimal HMM algorithm was implemented on a floating-point c language program platform running under the UNIX operating system. In HMM model, the voter I algorithm is used to identify a sequence of observed events and finds the most likely sequence from it which becomes the word uttered by the user.



PROPOSED SYSTEM:

Using this application we paved a way for the impaired people who can easily interact with normal people anywhere. The aim is to design and construct a

hand movement based system for physically challenged. The user can wear this device to hand with the simple hand movement, they can request basic needs like water, food etc by using flex sensors. Using GSM technology an alert message can also be sent. The system also displays the request on android phone using Bluetooth wireless technology. This project makes use of an APR-33A3 voice chip for audio announcement and microcontroller which is programmed with the embedded C instructions.



CONCLUSION:

The main objective of this research was to implement an android based application for deaf and dumb people to communicate with normal people. Integrating features of all the hardware components used have been developed in it. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the

unit. One of the area with the greatest potential impact was in the contribution that mobile application can reduce the communication gap between deaf and dumb people with normal people. Earlier, interaction through mobile phone is considered very important in enhancing better understanding in social situation. Secondly, using highly advanced IC's with the help of growing technology, the project has been successfully implemented. Thus the project has been successfully designed and tested. This project is helpful for further additional help of developing mobile communication for deaf and dumb individuals.

[4] D. Nashat, A. Shoker, F. Al-Swat and R. Al-Ebailan, "AN ANDROID APPLICATION TO AID UNEDUCATED DEAF-DUMB PEOPLE", International Journal of Computer Science and Mobile Applications, vol. 2, no. 9, pp. 1-8, 2014.

REFERENCES:

- [1] A. Sujith Kumar and Shahabaz Begum, "Sign Mobiles: An Android App for Specially Able People," Speech to-Text Translation, ASL Dictionaries (TXT2ASL), 2014.
- [2] Solanki Krunal M, submitted Report on "Indian sign languages using flex sensor glove", Department of Biomedical Engineering, Govt. Engineering faculty, Gandhinagar, India, vol. 4, no. 6, June 2013.
- [3] G. K and M. R, "Sign Language to Speech Translation System Using PIC Microcontroller", International Journal of Engineering and Technology, vol. 5, no. 2, pp. 1024-1028, 2013.

