

# An Android Application for the Hearing Impaired

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## ABSTRACT

This application helps the deaf and dumb person to communicate with the rest of the world using sign language. This 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 this application has characteristic feature in mobile without dialing number and uses a technology that translates spoken and written words into sign language with video. This application includes a voice based, text based and video based interaction approach. Technologies have not mashed up to solve the problem of mobile sign language translation in daily life activities. 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.

Keywords - VRS; speech-to-sign technology; recognition (key words)

## I. INTRODUCTION

Communication plays an important role for human beings. Communication is treated as a life skill. Keeping these important words in mind we present this paper to mainly focus on aiding the speech impaired and paralyzed patients. Over 5% of the world's population – 360 million people – have disabling hearing loss (328 million adults and 32 million children), 21 million people in India are suffering from hearing disability. This is equivalent to 2.1% of the population. Video chat technology continues to improve and one day may be the preferred means of mobile communication among the deaf. . Deaf people could gesture sign language into smart phone by using VRS which would produce audible and textual output. Mobile gesture recognition might enable the deaf to

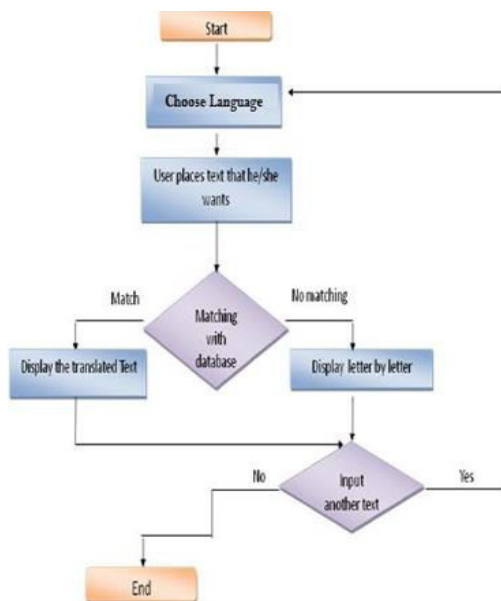
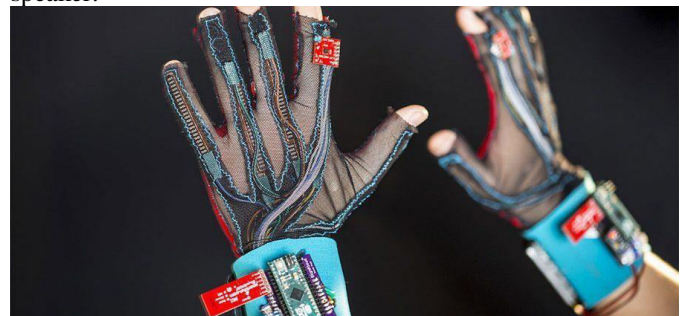
converse with the hearing remotely and intermediated by a video interpreter. Video interpreter is responsible for helping deaf or hearing impaired individuals understand what is being said in a variety of situations. ASL(American Sign Language) is the language used by hearing impaired which is the finger spelling of words. Our paper focusses on communication between a normal person unaware of ASL and a deaf and dumb person knowing ASL.

## II. EXISTING SYSTEMS

### 2.1 ASL keyboard

ASL keyboard is available in google play store. It can be used to text even in whats app in ASL. But the reply would not be in sign language. This app will fetch them a real time video using JSON concept.

corresponding English words are transmitted through the speaker.



## III. SIGN ALOUD GLOVE

Sensor that can interpret our English letters in ASL. This glove is worn by a deaf and dumb person and the actions made by him are captured by the glove and the

## IV. DISADVANTAGES OF THE EXISTING SYSTEM

This glove will not work if both end people are at a distance This product is not efficiently available in the market and incase if it is available it is very costly and not user friendly.

SVM is used to recognize the sign (finger spelling) and display corresponding English text. A part of the specified SVM soft computing techniques, the work can be extended to add some other soft computing techniques and

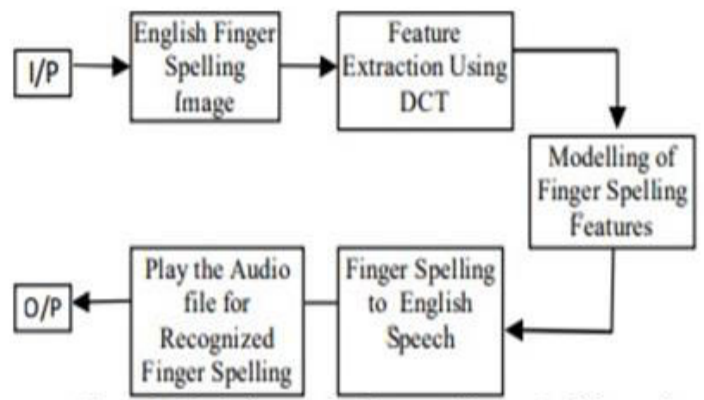
also to increase the performance and accuracy of sign language.

Normal person isn't converted to ASL.



**V. PROPOSED SYSTEM**

In our system, the deaf and dumb person can communicate to the normal person through ASL keyboard or voice recorder (deaf only). The text sent from the deaf and dumb person is converted to normal English message through the concept of Recognition. The reply given by the normal person fetches the deaf and dumb person with a real time video using the concept of JSON (Java Script Object Notation).



**VI. RECOGNITION**

An English finger spelling recognition system proposed for human computer interaction using Image processing Technique and SVM Neural networks will be implemented. It recognizes 26 English Alphabetic letters and identifies the finger spelling images which will be presented in the English .

**VII. JSON(JAVA SCRIPT OBJECT NOTATION)**

JavaScript Object Notation is an open-standard file format that uses human-readable text to transmit data objects consisting of attribute-value pairs and array data types (or any other serializable value). It is a very common data format used for asynchronous browser/server communication, including as a replacement for XML in some AJAX-style systems. JSON is a language-independent data format. It was derived from JavaScript, but as of 2017 many programming languages include code to generate and parse JSON-format data.

**VIII. ADVANTAGES OF THE PROPOSED SYSTEM**

- You don't have to search for an interpreter for translation. A deaf and dumb person and a normal person who doesn't know ASL can communicate even when they are at a distance.
- Cost efficient.
- Simple and user friendly.

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