

SIGN LANGUAGE TRANSLATOR FOR DEAF/DUMB

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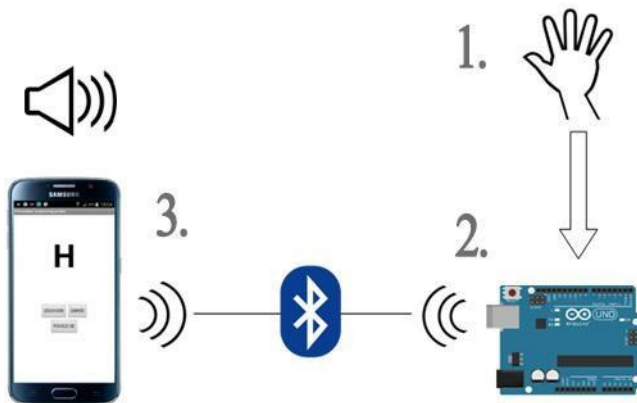
1. Introduction

The inability of speech is a substantial problem to deaf/dumb people. They are often misunderstood and discriminated. People with such disabilities use various methods to communicate with others, one of these methods is the sign language. Sign language is made of signs, which are formed with hand movements and other body parts, by which a point is made.

The purpose of this paper is to translate signs to speech, which would be emitted from a phone. This would make communication easier for deaf/dumb people with others.

2. Method of operation

This project is realised by using glove, which have flex sensors on each finger, which detect the position of the fingers. Values from sensors are processed on microcontroller Arduino. After recognition, recognised words and letters are emitted from the phone speaker. This project is realised on the Android platform.



Picture 2. – How translator works

1. Glove with flex sensors.
2. Arduino (performs processing and character recognition and communicates with the android phone).
3. Android application received letters or words (via Bluetooth) emits from the phonespeaker.

3. Results

Training and testing algorithm for recognizing characters, it has been found that by using the flexible sensor, and the detection method, can be achieved a great success in the identification signs. The advantage of this project, in comparison to other work with similar subject, is that the whole system is mobile (because of the flexible sensors), as opposed to those that use a camera or Kinect.

4. Conclusion

Sign language is a useful tool to ease the communication between the deaf or mute community and the normal people. Yet there is a communication barrier between these communities with normal people. This project aims to lower the communication gap between the deaf or mute community and the normal world.

The main feature of this project is that it is designed for everyday use and that users have the option of entering their personal characters that do not belong to the standard sign language.

5. Literature

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