

Survey on Real-Time Communication System Powered By AI for Specially Abled

S.NO	AUTHOR and YEAR	PUBLICATION and TITLE	PROBLEMS and IDENTIFICATION	METHODS	OUTPUT
1.	AUTHOR : Anbarasi Rajamohan, Hemavathy R., Dhanalakshmi M. Year:2013	Publication: International Journal of Scientific Engineering and Technology Title: Deaf-Mute Communication Interpreter	Communications between deaf-mute and a normal person have always been a challenging task. The project aims to facilitate people by means of a glove based deaf-mute communication interpreter system. The glove is internally equipped with five flex sensors, tactile sensors and accelerometer. For each specific gesture, the flex sensor produces a proportional change in resistance and accelerometer measures the orientation of hand. The processing of these hand gestures is in Arduino. The glove includes two modes of operation – training mode to benefit every user and an operational mode. The concatenation of letters to form words is also done in Arduino. In addition, the system also includes a text to speech conversion (TTS) block which translates the matched gestures i.e. text to voice output.	The evaluation of Deaf-mute communication interpreter was carried out for ten beginners for letters _A_ _B_ _C_ _D_ _F_ _I_ _L_ _O_ _M_ _N_ _T_ _S_ _W_. Word formation from letters is also performed using an end signal. The hand glove is mounted with five flex sensor, an accelerometer and tactile sensors. Table 1 shows the Output voltage across a voltage divider network with constant resistance of 22Kohms, the digital value and the corresponding resistance for different bending angles of flex 2.5° mounted in thumb and pinky fingers.	The project proposes a translational device for deaf- mute people using glove technology. The proposed technique has enabled the placement of five flex sensor, 5 tactile sensors and an accelerometer on to a glove. The results demonstrate that sensor glove design with tactile sensor helps to reduce the ambiguity among gestures and shows improved accuracy. Further the device will be an apt tool for deaf- mute community to learn gesture and words easily. The project can be enhanced to include two or more accelerometer's to capture the orientation of hand movements once the gesture is made. This will expand the capability to translate larger gestures.

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2.	Author: K.Sunitha, Anitha Saraswathi, Aarthi,Jayapriya, Lingam Sunny Year:2016	Publication: ripublication Title: Deaf Mute Communication Interpreter	Communication between the deaf and non-deaf has always been a very cumbersome task. This paper aims to cover the various prevailing methods of deaf-mute communication interpreter system. The two broad classification of the communication methodologies used by the deaf –mute people are Wearable Communication Device and Online Learning System.	The five sub- divided methods are SLIM module, TESSA, Wi-See Technology, SWI_PELE System and Web- Sign Technology. The working of the individual components used and the operation of the whole system for the communication purpose has been explained in detail in this paper.	Under Wearable communication method, there are Glove based system, Keypad method and Handicom Touchscreen. All the above mentioned three sub-divided methods make use of various sensors, accelerometer, a suitable microcontroller, a text to speech conversion module, a keypad and a touch-screen. The need for an external device to interpret the message between a deaf –mute and non-deaf-mute people can be overcome by the second method i.e online learning system. The Online Learning System has different methods under it, five of which are explained in this paper.
3.	Author: B.Jadhav, Nipun Munot, Madhura Hambarde, Jueli Ashtikar Year:2015	Publication: ripublication Title: Hand Gesture Recognition to Speech Conversion in Regional Language	Generally deaf-dumb people use sign language for communication, but they find difficulty in communicating with others who don't understand sign language. Due to which communications between deaf-mute and a normal person have always been a challenging task. We propose to develop a device which can convert the hand gestures of a deaf- mute person into speech.	This methodology provides a map for developing a Digital wireless glove which is fitted with Flex sensors and accelerometer. These sensors sense the gestures of a person in the form of bend of fingers and tilt of the hand fist.	This system includes a voice playback IC to give the real time speech output in regional language as well as a LCD module to display the text. The text display being in English, the voice output of this device will be in regional language (here Marathi). So this device acts as a communicator as well as a translator providing more flexibility in communication.
4.	Author: Alex Rupom Hasdak, Istiaq Al Nur, Adnan Al Neon, Hasan U. Zaman. Year:2018	Publication: IEEE Title: Deaf-Vibe: A Vibrotactile Communication Device Based on Morse Code for	This paper proposes an alternate solution for easy communication by deaf and mute people. A device named Deaf-Vibe has been developed, which	In this method, the voice message is converted to text first and then to equivalent Morse code signals using a built-in	A deaf person wearing the glove senses the vibration in his or her fingers and understands the message. This device can also be used by a mute person to send messages by bending fingers in the Morse code sequence. The flex

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		Deaf-Mute Individuals.	enables deaf and mute people to communicate rather easily with others using tactile senses and gestures.	Morse code conversion table. These signals drive vibration motors placed inside the fingers of a wearable glove.	sensors placed within the glove fingers sense the finger movement and generate equivalent electrical signals which are then converted to text using a text-to-voice synthesizer to be finally pronounced and heard as audible messages. The resulting device is a simple, low-cost efficient and wearable solution which can be used by deaf and mute people in their everyday lives as an effective communication tool.
5.	Author: Kedar Potdar, Gauri Nagavkar Year:2017	Publication: computer science Title: Real-time Communication System for the Deaf and Dumb	This project aims to aid the deaf-mute by creation of a new system that helps convert sign language to text and speech for easier communication with audience.	The system consists of a gesture recognizer hand-glove which converts gestures into electrical signals using flex sensors. These electrical signals are then processed using an Arduino microcontroller and a Python-based backend for text-to-speech conversion. The glove includes two modes of operation – phrase fetch mode and letter fetch mode. The phrase fetch mode speaks out words at once, while the letter fetch mode speaks out individual letters.	This project forms a base infrastructure which can later be augmented with addition of different Sign Languages and integrating with other hearing impaired aid systems.