# ARTIFICIAL INTELLEGENCE

# REAL TIME COMMUNICATION SYSTEM POWERED BY AI FOR SPECIALLY ABLED

**IBM PROJECT-TEAM ID: PNT2022TMID39569**

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# LITERATURE REVIEW

## Survey 1:

## LUO CH, SHIH CH(1996):

## ADAPTIVE MORSE-CODED SINGLE-SWITCH COMMUNICATION SYSTEM FOR THE DISABLED:

Luo CH, Shih CH et.al. proposed an approach to help persons with impaired hand coordination and dexterity by developing a Morse code based keyboard. Morse code, with an easy-to-operate, single switch input system has been selected as an excellent communication adaptive device. It has already been successfully applied as a communication tool for people with severe physical handicaps in areas that would otherwise not be accessible to them, including writing, typing, calculating, and drawing.The major disadvantage the difficulty of maintaining precise time intervals, a Morse code time series, especially when typed by a severely physically disabled person, is generated with an unstable typing speed. Therefore, a suitable adaptive automatic recognition method is needed.

## Survey 2:

## MARCIA B. DUGAN(2003):

## LIVING WITH HEARING LOSS:

Marcia B. Dugan et.al. proposed approach provides a way to communicate via text messages over a regular phone line for the users who are normal as well who are deaf using TTY(Text Telephony) technique.TTY requires specialized equipments that usually consists of a type writer like keyboard, a telephony coupler and some form of visual display.The major disadvantage in their proposed system is that the possession of TTY equipment isn't as widespread within the general masses during that period of time which makes it complicated for communication to occur between deaf and non deaf individuals.

**Survey 3:**

## G. LEITNER, S. PLATTNER, AND M. HITZ(2006):

## USABILITY EVALUATION OF MOBILE APPLICATIONS IN LEISURE-ORIENTED CONTEXTS:

G. Leitner,S. Plattner, and M. Hitz et.al. proposed pictogram based communication system between a patient and physicians aids non native language speakers or people with speech,hearing or cognitive impairments to communicate the relavant medical information or others signs to physicians in a more efficient way.It makes use of intuitive icons and interactive symbols which are easy to access and difficult to misplace.The advantages of their proposed system is that the quick,simple,easy and intuitive communication is used to assist the person who is injured or paralyzed with the help of medical personnel as well.

**Survey 4:**

## WONG SENG YUE AND NOR AZAN MAT ZIN(2013):

## VOICE RECOGNITION AND VISUALIZATION MOBILE APPS GAME FOR TRAINING AND TEACHING HEARING HANDICAPS CHILDREN:

Wong S. et al. suggested an application for teaching earless kids who have issues in acquiring knowledge, understanding and responding, to overcome this issue by providing a reciprocative virtual environment. The concept was to inspire them to exercise, maintain and improve without any aid from anybody else.If the audio correlates a word exactly in the database, the pictorial output is seen. This type of matching causes a major disadvantage in their project as it needs to store a huge amount of predefined audio formats with their corresponding word patterns and it also consumes more time during communication as it needs to match with the words and audios present in the database each time and during each message.

**Survey 5:**

## M.BANDODKAR, AND V.CHOURASIA(2014):

## LOW COST REAL TIME COMMUNICATION BRAILLE HAND-GLOVE FOR VISUALLY IMPAIRED USING SLOT SENSORS AND VIBRATION MOTORS:

Bandodkar et.al. developed a Braille hand glove for visually impaired using slot sensors and vibration motors. This system is designed a one handed braille glove for English characters. the motors are attached to five fingers and to the palm. Another system UbiBraille is designed for two handed braille system which uses index finger, middle finger and ring finger to wear six ring vibrators as the actuators.

**Survey 6:**

## CHING-HUA CHUAN, ERIC REGINA, AND CAROLINE GUARDINO(2014):

## AMERICAN SIGN LANGUAGE RECOGNITION USING LEAP MOTION SENSOR:

Ching-Hua Chuan et.al. used a palm-sized, handy and a low-cost 3D motion sensor for recognition of American Sign Language. They used Support Vector Machine and K-nearest neighbor to analyze the 26 English alphabets in American Sign Language utilizing the imitative aspects of the collected data. The testing results in the high mean classification rate of 79.83% and 72.78% was attained by a SVM and k-nearest neighbor accordingly.

**Survey 7:**

## M.V.N.R.P.KUMAR, ASHUTOSH KUMAR, S.B. ARAWANDEKAR, A. A. BHOSALE AND R. L. BHOSALE(2015):

## AVR BASED GESTURE VOCALIZER USING SPEECH SYNTHESIZER IC:

M.V.N.R.P. Kumar et.al. created a system consisting of a gadget that converts a sign into audio and text to enable the contact among the silent societies and the hearing people. Data glove can detect almost all the hand movements and AVR microcontroller based system converts described movements into audio and text form on LCD for the hearing impaired. The tongue-tied people can use these gloves to depict gestures that will be transformed into audio so that hearing people can effortlessly comprehend its interpretation.

**Survey 8:**

## AMRITHA SURESH, BINNY PAULOSE, RESHMA JAGAN AND JOBY GEORGE (2016):

## VOICE BASED EMAIL FOR BLIND:

A voice based email architecture is proposed by Amritha Suresh, Binny Paulose, Reshma Jagan and Joby George which will help blind people to access email. The proposed system makes use of Speech Recognition, Interactive Voice Response and Mouse Click events. Also, for additional security purposes voice recognition is used for user verification. The existing system is not user friendly for blind people as it does not give any audio feedback to readout contents for them.

# REFERENCES


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