

VSB ENGINEERING COLLEGE
ELECTRONIC AND COMMUNICATION ENGINEERING
IBM NALAIYA THIRAN
LITERATURE SURVEY

TITLE: Real-Time Communication System Powered by AI for Specially Abled

DOMAIN: Artificial Intelligence

LEADER NAME: HEMARAJEE R

TEAM MEMBERS NAME:

1. DHAYALAN S
2. DINESH KUMAR P
3. ELAKKIYA P
4. HEMARAJEE R

INDUSTRY MENTOR NAME: SOWJANYA , SANDEEP DOODIGANI

FACULTY MENTOR NAME: SHARMELA K

ABSTRACT:

In our society, there some specially abled persons are leading their life by facing difficulty to sustain in this world . Specially abled is used to describe a wide spectrum disabilities . Communications between deaf people and normal people has been a challenging task. It is very difficult to convey the message for mute people as all normal people doesn't know sign language. During emergency situation it is a toughest task to convey their messages. As like we converting human language to machine language through programming language. We can bring a solution to them by converting voice message into hand-sign message and vice versa.

In this project we are going to develop a system to convert sign language to vice message and voice to sign language . There is the option available to change into the desired language to convey a message to normal people . This app enables deaf and dumb people to convey their information using signs which get converted to human-understandable language and speech is given as output .

INTRODUCTION:

Communication is the process of exchanging ideas, thoughts, feelings and information in form of verbal or non-verbal message. But for a person who cannot hear is visual, but not auditory. This person lacks the amenities which a normal person owns. The sign language is an important and only method of communication for deaf-dumb persons. As sign language is a formal language employing a system of hand gesture for communication. In order to overcome the complexity, the artificial speech system is introduced. An artificial speech system will be very helpful for them to convey their thoughts to others. Using the speech to text conversion technique, on-screen text provides a better way for the people with Hearing impairment to visually read which is in audio. The vocally impaired people can interact with normal people using our work which recognizes sign languages and converts them into on-screen text as well as audio sounds.

LITERATURE SURVEY:

1. In real word, there are many people who are deaf and dumb cannot communicate easily. Hence in this paper a glove is designed using flex sensor to communicate between Dumb and normal people and assigning particular message for each gesture .The gestures created by the glove will be sent to normal person's phone and will also be displayed on LCD. In this paper a Braille Embosser is designed to communicate with blind person having servomotors to imprint Braille characters with the advancement in the technology, there have been many innovations in regards with this disabled people but person with moderate income would not afford it. So the first and the foremost need of a society is to develop a system through which a person with disabilities can live a life that a normal person does.
2. People with having disabilities implies that having fundamental difficulty accomplishing aspects. They are of numerous types like physical disability in nature, due to amputation inability to walk, sensory like blindness, hearing impairment with the assistance of this app, this gap can be filled. The problems faced by specially abled people have been taken into consideration creating a balanced platform for them. Utilizing the necessary tools and functions required for enabling them to locate and understand where the restrooms are, keeping in mind hygiene and safety factors. Certain parameters are taken into consideration such as voice recognition, Maps Live feature, magnifier, sign language interpretation, hands-free settings, and many more features. They could converse or speak and reach their destination with the support of the virtual assistant of a very specialized navigation system designed especially for them with a simple user interface which is easy to interpret and work efficiently according to the needs of the user.
3. Artificial life is a very broad discipline which spans such diverse topics as artificial evolution, artificial ecosystems, artificial morphogenesis, molecular evolution, and many more. Langton offers a nice overview of the different research questions

studied by the discipline [6]. Artificial life shares with artificial intelligence (AI) its interest in synthesizing adaptive autonomous agents. Autonomous agents are computational systems that inhabit some complex, dynamic environment, sense and act autonomously in this environment, and by doing so realize a set of goals or tasks for which they are designed.

4. A system is built that will reduce the gap for the specially-abled, the system recognizes the hand gesture and translates it into corresponding letters. ASL data set is used. The software is built on Python and inherits the power of deep learning. A convolutional neural network is used for image classification. The system was able to classify all the alphabets from A-Z with an accuracy of 98.89 percent. The software aims to eradicate the communication barrier between the hearing-impaired community and the rest of the world. The software provides a medium for the inarticulate community to express their thoughts to everyone out there.

REFERENCES:

1. Thoutam, N., Jha, D. K., Jaiswal, L., Deshmukh, S., & Raj, R. Hand gesture, Text and Speech Translation and Recognition System for specially abled people using AI.
2. Raizada, P., Gupta, S., & Saboo, S. (2021, October). Locating Restrooms for Specially-Abled People using Artificial Intelligence and Machine Learning. In *2021 International Conference on Smart Generation Computing, Communication and Networking (SMART GENCON)* (pp. 1-6). IEEE.
3. Maes, P. (1995). Artificial life meets entertainment: lifelike autonomous agents. *Communications of the ACM*, 38(11), 108-114.
4. Khan, M. D., Patro, B. S., Ranjan, R., Behera, M. C., Kumar, R., & Raj, U. (2021, September). Real-Time American Sign Language Realization Using Transfer Learning With VGG Architecture. In *2021 IEEE 4th International Conference on Computing, Power and Communication Technologies (GUCON)* (pp. 1-5). IEEE.