COMPUTER SCIENCE AND ENGINEERING
IBM NALAIYA THIRAN
LITERATURE SURVEY

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

DOMAIN: Artificial Intelligence

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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 .

INTODUCTION

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.

- 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.
- 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.

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, studied by the discipline.
- 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.

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