M.Kumarasamy College of Engineering
NAAC Accredited Autonomous Institution
Approved by AICTE & Affiliated to Anna University
ISO 9001:2015 Certified Institution
Thalavapalayam, Karur, Tamilnadu.

REAL TIME - COMMUNICATION SYSTEM POWERED BY AI FOR SPECIALLY ABLED

TEAM ID:

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ABSTRACT:

In our society, we have people with disabilities. The technology is developing day by day but no significant developments are undertaken for the betterment of these people. Communications between deaf-mute and a normal person has always been a challenging task. It is very difficult for mute people to convey their message to normal people. Since normal people are not trained on hand sign language. In emergency times conveying their message is very difficult. The human hand has remained a popular choice to convey information in situations where other forms like speech cannot be used. Voice Conversion System with Hand Gesture Recognition and translation will be very useful to have a proper conversation between a normal person and an impaired person in any language.

The project aims to develop a system that converts the sign language into a human hearing voice in the desired language to convey a message to normal people, as well as convert speech into understandable sign language for the deaf and dumb. We are making use of a convolution neural network to create a model that is trained on different hand gestures. An app is built which uses this model. 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.

LITERATURE REVIEW:

Artificial intelligence (AI) is finding its way into many industrial, retail, and medical applications. But the technology is also being mined for a purpose that can be considered even more basic− helping the deaf and hard-of-hearing communicate with the hearing world. The application would work in real time and provide bi-directional translation, enabling both the deaf/hard-of-hearing and hearing person to freely communicate.

AUTHOR: Bayon Mohammad saleh and Mohammad Usman Tariq

DESCRIPTION: This paper shows how artificial intelligence is being used to help people who are unable to do what most people do in their everyday lives. Aligned with communication, D-talk is a system that allows people who are unable to talk and hear be fully understood and for them to learn their language easier and also for the people that would interact and communicate with them. This system provides detailed hand gestures that show the interpretation at the bottom so that everyone can understand them. This research allows the readers to learn the system and what it can do to people who are struggling with what they are not capable of and will provide the technical terms on how the system works.

AUTHOR: Bhargav

DESCRIPTION: The software, christened DnD Mate, does not only translate sign language into text and speech, but also translates speech into sign language, all in real time and as quick as the person speaks. Currently, there are no applications/software that facilitates a two-way communication channel.

This easy-to-use innovative digital translator works with your device's in-built cameras, reads hand and facial gestures by the deaf and mute user and translates them into text and speech. That is not all! The software will also translate your voice or text input into sign language.The software is based on a Deep Learning model and can work both offline and online.

AUTHOR: PremKumar

DESCRIPTION: The use of artificial intelligence is a boon for specially-abled people.Artificial Intelligence can help those with disabilities accomplish tasks they never thought possible; here are just a few ways we've seen AI technology impact lives: Facial recognition and predictive texting tools allow some individuals who have difficulty speaking to communicate more easily on the phone or through social media channels like Facebook Messenger; automated

systems can detect when someone falls or trips unexpectedly so emergency services will be notified quickly; wheelchairs equipped with sensors make it easier for disabled kids play outside without assistance from adults. These advancements have helped not just disabled individuals but also those who interact with them by making it easier to communicate without embarrassment or discomfort. The future is bright with the help of artificial intelligence.

AUTHOR: TamilSelvan K.S

DESCRIPTION: Deaf-mute people can communicate with normal people with help of sign languages. Our project objective is to analyse and translate the sign language that is hand gestures into text and voice. For this process, Real Time Image made by deaf-mute people is captured and it is given as input to the pre-processor. Then, feature extraction process by using otsu's algorithm and classification by using SVM(support Vector Machine) can be done. After the text for corresponding sign has been produced. The obtained text is converted into voice with use of MATLAB function. Thus hand gestures made by deaf-mute people has been analysed and translated into text and voice for better communication.