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

PROBLEM STATEMENT

Why do we need a real time communication system for the specially-abled?

According to the times now survey, the Indian population consists of about 30 percent disabled people, and of that 20 percent are deaf and mute. The only chance of communication is the sign language but it's practically not feasible that everyone studies the sign language. Technology has risen to unprecedented rates which also comes with a leeway for the disabled people. With the help of technology, 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.

OUR PLAN:

The aim of this project is to create a software that does not only convert sign language into text and speech but also translates speech into sign language in real time and as quick as the person speaks. We will be using a deep learning model like CNN for this project. CNN is used for image classification and classifies the object into the respective classes and does the object detection accordingly. An app is built which uses this model. This app enables deaf and mute people to convey their information using signs which gets converted to human-understandable language and speech is given as output.

ABSTRACT

Technology is the need of the hour and with rising developments in Technology, so does the need for the disabled people. This project aims at the welfare of disabled people. First, we train a deep learning model on training data and validate it using test data for a good accuracy. Next, once the model has been trained, it takes an image as input and then recognizes the sign made by the person in the image. Finally, the recognized signs are converted to speech. This system will be deployed as an online application, using Flask framework.