Real Time Indian Sign Language Recognition using Hand Gesture and Text/Voice Generation

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***Abstract*-Communication with a person with hearing impairment is always a great challenge. Disabled people with hearing loss use sign language as a means of communicating with others. Hand gestures are one of the ways that sign language users can communicate nonverbally. Many people around the world have developed different sign language to communicate in their native language. In this paper, we present a proposed system for recognizing Indian Sign Language (ISL) based on hand gestures and generate the speech output for the recognized text. The purpose of this work is to develop a model that can recognize hand gestures in real time using computer vision and then the model is trained to generate the appropriate character, words, or sentences for the recognized sign. In order to enhance communication between the person with hearing impairment and the blind, this technology also offers voice output for the generated text. Additionally, this system offers the text to sign language generation paradigm, which enables two-way communication without the use of a translator.**

***Keywords- Indian Sign Language (ISL), Hand gestures, Computer Vision, Convolutional Neural Networks (CNN), Voice Output, Two-way communication***