Sign Language Recognition System

In the case of deaf and dumb people, the means of communication are different. They communicate using sign language among themselves and with normal people but normal people do not take seriously the importance of sign language. Not everyone possesses the knowledge and understanding of sign language which makes communication difficult between a normal person and a deaf and dumb person. To overcome this barrier, one can build a model based on machine learning.

The existing Indian Sign Language Recognition systems are designed using machine learning algorithms with single and double-handed gestures but they are not real-time and there is no existing system which converts sign language into speech. So we propose a system which can convert sign language into text and to speech in real time.

A model can be trained to recognize different gestures of sign language and translate them into English and text can be converted into speech using deep neural network. This will help a lot of people in communicating and conversing with deaf and dumb people. We propose a method to create an Indian Sign Language dataset using a webcam and then using transfer learning, train a Tensor Flow model to create a real-time Sign Language Recognition system. The system achieves a good level of accuracy even with a limited size dataset.

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