Abstract

In recent years, Sign language is an important research problem for communicating with hearing impaired people without the help of interpreter. Hand gesture is one of the methods used in sign language which is most commonly used by deaf and dumb people to communicate with each other or with normal people. The proposed algorithm aims at developing real time image processing based system for hand gesture recognition on personal computer with an USB web cam. This paper proposes a method to detect and recognize the static image of Indian Sign Language numbering system from zero to nine. The method is based on counting the open fingers in the static images. The proposed algorithm for gesture recognition is based on boundary tracing and finger tip detection and also deals with images of bare hands, which allows the signer to interact with the system in a natural way. The proposed algorithm is first detect and segments the hand region from the real time captured images. Then using the proposed methodology, it locate the fingers and classifies the gesture. Further the system convert Indian signs into text and then speech using an audio file stored on PC. The algorithm is size invariant but it is orientation dependent. The proposed system is implemented using
OpenCV.

References


Index Terms

Computer Science Image Processing

Keywords
Indian Sign Language Numeral Recognition - An Image Processing Approach

Hand Gesture Recognition (HGR), Human Computer Interaction (HCI), Region of Interest (ROI).