
Hand Gesture Recognition For Indian Sign Language

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1 Introduction

Sign language is the language of people with hearing and speaking disabilities. In this hands are moved in a particular way which along with some facial expression produces a meaningful thought which the speaker would like to convey. Gesture recognition means recognition of human gestures by a machine. It could be done by using vision algorithms or by physical (glove-based) sensors or both. A human gesture is any meaningful pose or movement of human body that could be used. Gestures are cumulative; they are the sum of all of our body parts orientations, our expressions and even the contextual setting they are performed in. There are a vast number of human gestures that we use to communicate our ideas. A gesture once performed can perhaps never be repeated exactly by the same person, and the probability that two persons in the world could perform the gesture identically is also extremely low.

RGB based approach is one of the existing model which do not require a large amount of data to train the machine. The other is Glove based approach and can give more accuracy but requires a large amount of data-set. We propose a method in which geometric features are extracted from contour part of hand. HTD (Human Texture Descriptors) to classify static sign according to a nearest neighbour heuristic.

This becomes a challenge when we attempt to write a recognition algorithm. In the ideal case, a gesture recognition .For correspondence system needs to be portable, lightweight, unobtrusive, robust, fast, low-cost and intelligent enough to understand the emotion and tension of human gestures. The system should not be affected by ambient light intensity and colour of the object to be recognized. The system could give its output in the form of synthesized speech. The system

should generalized well to different human body sizes and shapes. Since such a system becomes very complicated, we could break gestures down into simpler subsets like hand gestures (e.g. waving), face gestures (e.g. smiling) and body gestures (e.g. leaning); and try to recognize them separately. Gesture recognition has applications in Natural User Interfaces, Virtual Reality, medical rehabilitation, robot control and even psycho-analytic.