Face Gestures Detection using Improved Viola-Jones Algorithm

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Abstract

Many studies indicate that words and sentences represent only 7% of our ways of communicating with our world, while the bulk goes to our movements and gestures that are translated into the minds of the recipients unconsciously of them. Face detection is an important topic in computer vision. Viola-Jones is a powerful approach of identifying objects, especially facial recognition. Viola-Jones is subjected to a number of parameters that affect its performance. The measuring factor has the most impact on facial recognition and provides a balance between speed and accuracy in face detection. In this paper, the improved Algorithm of Viola Jones has been used by modifying the measurement factor using a genetic algorithm to determine face gestures.

In this paper, the KNN classifier, MFCC (Mel Frequency Cepstral Coefficient), and the Extract feature are used in evaluating the detection of face gestures. First, we take the picture as input and use signal processing techniques to convert it to time domain references. For detecting the front face gestures accurately and efficiently, MFCC will be used with LBP (Local Binary
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Pattern) and DOG (Difference of Gaussians) to extract the feature. Based on the result of feature extracting, the KNN classifier classifies the activity of our input signal. Experimental results show that the proposed approach is superior to other ways of recognition.

References

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**Index Terms**

- Computer Science
- Algorithms

**Keywords**

Gestures, Face Detection, Face Recognition, Viola-Jones, Scale Factor, Genetic Algorithm.