Dynamic Gabor Filter Facial Features-Based Recognition of Emotion in Video Sequences

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Abstract : In the world of visual technology, recognizing emotions from the face images is a challenging task. Several related methods have not utilized the dynamic facial features effectively for high performance. This paper proposes a method for emotions recognition using dynamic facial features with high performance. Initially, local features are captured by Gabor filter with different scale and orientations in each frame for finding the position and scale of face part from different backgrounds. The Gabor features are sent to the ensemble classifier for detecting Gabor facial features. The region of dynamic features is captured from the Gabor facial features in the consecutive frames which represent the dynamic variations of facial appearances. In each region of dynamic features is normalized using Z-score normalization method which is further encoded into binary pattern features with the help of threshold values. The binary features are passed to Multi-class AdaBoost classifier algorithm with the well-trained database contain happiness, sadness, surprise, fear, anger, disgust, and neutral expressions to classify the discriminative dynamic features for emotions recognition. The developed method is deployed on the Ryerson Multimedia Research Lab and Cohn-Kanade databases and they show significant performance improvement owing to their dynamic features when compared with the existing methods.