Curvelet Features with Mouth and Face Edge Ratios for Facial Expression Identification

Authors : S. Kherchaoui, A. Houacine

Abstract : This paper presents a facial expression recognition system. It performs identification and classification of the seven basic expressions; happy, surprise, fear, disgust, sadness, anger, and neutral states. It consists of three main parts. The first one is the detection of a face and the corresponding facial features to extract the most expressive portion of the face, followed by a normalization of the region of interest. Then calculus of curvelet coefficients is performed with dimensionality reduction through principal component analysis. The resulting coefficients are combined with two ratios; mouth ratio and face edge ratio to constitute the whole feature vector. The third step is the classification of the emotional state using the SVM method in the feature space.