Abstract

The choice of a suitable set of features based on physiological signals to be utilised in enhancing the recognition of human emotion remains a burning issue in affective computing research. In this study, using the MAHNOB-HCI corpus, we extracted cepstral features from the physiological signals of galvanic skin response, electrocardiogram, electroencephalogram, skin temperature and respiration amplitude to train two state of the art pattern classifiers to recognise seven classes of human emotions. The important task of emotion recognition is largely considered a classification problem and on this basis, we carried out experiments in which the extracted physiological cepstral features were transmitted to Gaussian Radial Basis Function (RBF) neural network and Support Vector Machines (SVM) pattern classifiers for human emotion recognition. The RBF neural network pattern classifier gave the recognition accuracy of 99.5 %, while the SVM pattern classifier posted 75.0 % recognition accuracy. These results indicate the suitability of using cepstral features extracted from fused modality physiological signals with the Gaussian RBF neural network pattern classifier for efficient recognition of human emotion in affective computing systems.

Keywords