Emotion recognition from physiological signals

Gouizi K, Bereksi Reguig F, Maaoui C.

Abstract :

Emotion recognition is one of the great challenges in human-human and human-computer interaction. Accurate emotion recognition would allow computers to recognize human emotions and therefore react accordingly. In this paper, an approach for emotion recognition based on physiological signals is proposed. Six basic emotions: joy, sadness, fear, disgust, neutrality and amusement are analysed using physiological signals. These emotions are induced through the presentation of International Affecting Picture System (IAPS) pictures to the subjects. The physiological signals of interest in this analysis are: electromyogram signal (EMG), respiratory volume (RV), skin temperature (SKT), skin conductance (SKC), blood volume pulse (BVP) and heart rate (HR). These are selected to extract characteristic parameters, which will be used for classifying the emotions. The SVM (support vector machine) technique is used for classifying these parameters. The experimental results show that the proposed methodology provides in general a recognition rate of 85% for different emotional states.