FROM PHYSIOLOGICAL SIGNALS TO EMOTIONS: IMPLEMENTING AND COMPARING SELECTED METHODS FOR FEATURE EXTRACTION AND CLASSIFICATION (WedAmPO1)

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Abstract:
Little attention has been paid so far to physiological signals for emotion recognition compared to audio–visual emotion channels, such as facial expressions or speech. In this paper, we discuss the most important stages of a fully implemented emotion recognition system including data analysis and classification. For collecting physiological signals in different affective states, we used a music induction method which elicits natural emotional reactions from the subject. Four–channel biosensors are used to obtain electromyogram, electrocardiogram, skin conductivity and respiration changes. After calculating a sufficient amount of features from the raw signals, several feature selection/reduction methods are tested to extract a new feature set consisting of the most significant features for improving classification performance. [continued in the next page]
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Abstract:
Three well-known classifiers, linear discriminant function, k-nearest neighbour and multilayer perceptron, are then used to perform supervised classification.