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Automatic Facial Expressions Recognition Using Artificial Intelligence

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ABSTRACT

Most facial expression recognition systems, restrict that the facial features must be manually extracted. Differing from the previous systems, we propose a fully automatic facial expression analysis system that automatically extracts the facial features and recognized seven kinds of facial expressions. These expressions are: natural, sadness, happiness, anger, surprise, disgust, and fear.

In this research, we proposed two automatic facial expressions systems, which based on Principle Component Analysis for features extraction and Neural Network for facial expressions classification and these techniques, are implemented on raw images and on images after wavelet decomposition, as a preprocessing step. The technique after wavelet decomposition, gives better performance in terms of speed and accuracy. Also, the proposed technique provides better performance than published techniques applied on the same database.