Abstract

A novel approach to extract the light invariant local feature for facial expression recognition is presented in this paper. It is robust in monotonic gray-scale changes caused by illumination variations. Proposed method is easy to perform and time effective. The local strength for a pixel is calculated by finding the decimal value of the neighboring of that pixel with the particular rank in term of its gray-scale value among all the nearest pixels. When eight neighboring pixels are considered, the gradient direction of the neighboring pixel with the mix of second minima and maxima of the gray scale intensity can capture more local details and yield the best performance for the facial expression recognition in our experiment. CK+ dataset is used in this experiment to find out the facial expression classification. The classification accuracy rate achieved is 92.1 ± 3.2%, which is not the best but easier to compute. The results show that the experimented feature extraction technique is fast, accurate and efficient for facial expression recognition.
References


Tong, Yan, Wenhui Liao, and Qiang Ji. "Facial action unit recognition by exploiting their dynamic and semantic relationships." IEEE transactions on pattern analysis and machine intelligence 29, no. 10 (2007).


Index Terms

Computer Science  
Image Processing

Keywords

Emotion Classification, Expression Recognition, Image Analysis, Local Descriptor, Pattern Extraction.