Efficient Action Recognition based on Salient Object Detection

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Action recognition has become an important research topic in the computer vision area. This paper presents an efficient action recognition approach based on salient object detection. Recently, many features were directly extracted from video frames; as a result, unsatisfying results were produced due to intrinsic textural difference between foreground and background. Instead of whole frames, processing only on salient objects suppresses the interference of background pixels and also makes the algorithm to be more efficient. So, the main contribution of this paper is to focus on salient object detection to reflect textural difference. Firstly, salient foreground objects are detected in video frames and only interest features for such objects are detected. Secondly, we extract features using SURF feature detector and HOG feature descriptor. Finally, we use KNN classifier for achieving better action recognition accuracy. Experiments performed on UCF-Sports action dataset show that our proposed approach outperforms state-of-the-art action recognition methods.