

Human Action Retrieval System Using Features Weight Updating Based Relevance Feedback Approach

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Abstract : For content-based human action retrieval systems, search accuracy is often inferior because of the following two reasons 1) global information pertaining to videos is totally ignored, only low level motion descriptors are considered as a significant feature to match the similarity between query and database videos, and 2) the semantic gap between the high level user concept and low level visual features. Hence, in this paper, we propose a method that will address these two issues and in doing so, this paper contributes in two ways. Firstly, we introduce a method that uses both global and local information in one framework for an action retrieval task. Secondly, to minimize the semantic gap, a user concept is involved by incorporating features weight updating (FWU) Relevance Feedback (RF) approach. We use statistical characteristics to dynamically update weights of the feature descriptors so that after every RF iteration feature space is modified accordingly. For testing and validation purpose two human action recognition datasets have been utilized, namely Weizmann and UCF. Results show that even with a number of visual challenges the proposed approach performs well.

Keywords : relevance feedback (RF), action retrieval, semantic gap, feature descriptor, codebook

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