

Human action classification using an extended BoW formalism

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© Springer International Publishing AG 2017. In human action classification task, a video must be classified into a pre-determined class. To cope with this problem, we propose a mid-level representation which extends the Bag-of-Words formalism in order to better described the low-level features, exploring distance-to-codeword histograms. The main contribution of this article is the assembly of low-level features by a mid-level representation enriched with information about distances between descriptors and codewords. The proposed representation takes into account volumes of hyper-regions obtained from hyperspheres centered at codewords. Experimental results demonstrated that our strategy either has improved the classification rates more than 6% with respect to the compared mid-level representation for UCF Sports, or it is a competitive one, for KTH and UCF-11.