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Bag of Local Features for Person Re-Identification on Large-Scale Datasets

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Abstract : In the last few years, large-scale person re-identification has attracted a lot of attention from video surveillance since it has a potential application prospect in public safety management. However, it is still a challenging job considering the variation in human pose, the changing illumination conditions and the lack of paired samples. Although the accuracy has been significantly improved, the data dependence of the sample training is serious. To tackle this problem, a new strategy is proposed based on bag of visual words (BoVW) model of designing the feature representation which has been widely used in the field of image retrieval. The local features are extracted, and more discriminative feature representation is obtained by cross-view dictionary learning (CDL), then the assignment map is obtained through k-means clustering. Finally, the BoVW histograms are formed which encodes the images with the statistics of the feature classes in the assignment map. Experiments conducted on the CUHK03, Market1501 and MARS datasets show that the proposed method performs favorably against existing approaches.

Keywords : bag of visual words, cross-view dictionary learning, person re-identification, reranking
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