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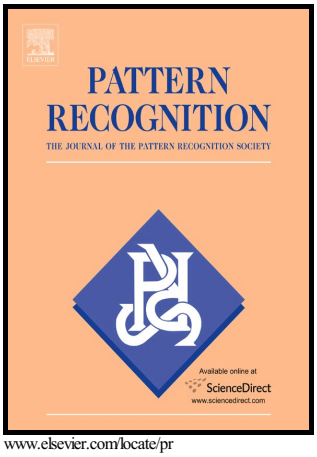

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Attributes Driven Tracklet-to-tracklet Person Re-identification using Latent Prototypes Space Mapping

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Abstract

Most of current person re-identification works identify a person by matching his/her probe image against a galley images set. One feasible way to improve the identification accuracy is the multi-shot re-identification, where the probe includes a small set of images rather than a single image. In this paper, we study the tracklet-to-tracklet identification, where both the probe and the target dataset are composed of small sets of sequential images, i.e., tracklets. To solve this problem and make our algorithm robust under multi-camera setting, we take full advantage of low-level features, attributes and inter-attribute correlations at the same time. Attributes are expected to offer semantic information complementary to low-level features. In order to discover the correlations among attributes, a novel discriminative model is proposed to exploit low-level features and map attributes to a discriminative latent prototypes space. An alternating optimization procedure is designed to perform the learning process. We also devise a number of voting schemes to total up matching scores from images to tracklets. Experiments on four public datasets show that our approach achieves a consistently better performance than existing person re-identification methods.

Keywords: tracklet-to-tracklet, person re-identification, attributes, latent prototypes space, attribute correlations

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