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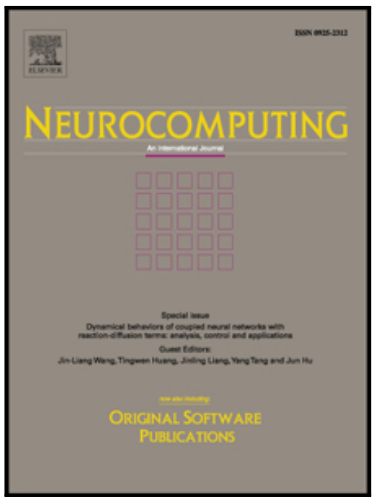

Multi-Graph Feature Level Fusion for Person Re-identification

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Multi-Graph Feature Level Fusion for Person Re-identification

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Abstract

Person re-identification refers to the task of matching people in non-overlapping cameras. As the concerns for public safety keep rising, the ability to accurately identify a subject in surveillance cameras is a highly demanded technique. In practice, person re-identification is challenging due to the substantial appearance shift caused by view change. Many factors, such as illumination, pose, and image quality, can affect the matching accuracy. In the past, many feature descriptors have been engineered for more robust matching in certain cases. In this paper, we propose a graph-based feature fusion scheme to effectively leverage different feature descriptors. Moreover, instead of determining the matching results by computing pairwise distance between a unknown probe and a gallery subject in the database, we learn the similarity scores between a probe and all the gallery subjects simultaneously in a graph learning framework. We use off-the-shelf features and test our method on popular benchmark datasets for person re-identification. Experimental results show that different feature descriptors can be effectively combined through this graph learning scheme and superior results are achieved as compared with the rival approaches.

Keywords: Person re-identification, multi-camera, feature fusion, graph learning

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