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Pedestrian search in surveillance videos by learning discriminative deep features

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Abstract

Searching for a target person in videos captured by many non-overlapped cameras is an important yet challenging problem in the fields of intelligent video surveillance. Person re-identification is a key technique in the person searching task. In this paper, we propose a discriminative objective function to learn deep CNN features for person re-id. Specially, the proposed objective function reduces distances between instances belonging to the same person, and enlarges distances between instances belonging to different persons at the same time. With the goal of inter-class dispersion and intra-class compactness, the obtained deep features can be more discriminative than many traditional training objectives, e.g. softmax, contrastive and triplet objective functions. Extensive experiments on person re-id benchmarks validated the superiority of the proposed objective function. Based on the proposed person re-identification algorithm, we implement a pedestrian search system by integrating three components: pedestrian detection, multi-person tracking and

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