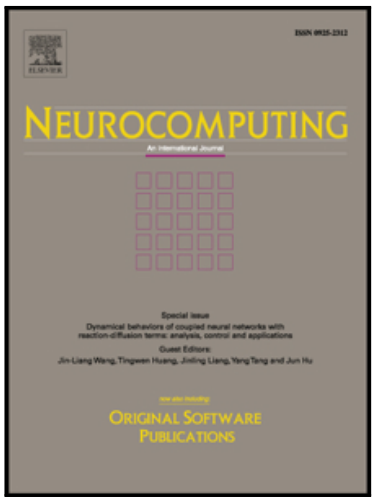

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Behzad Mirmahboub , Mohamed Lamine Mekhafi , Vittorio Murino

PII: S0925-2312(17)31516-3
DOI: 10.1016/j.neucom.2017.09.019
Reference: NEUCOM 18879

To appear in: *Neurocomputing*

Received date: 24 March 2017
Revised date: 3 September 2017
Accepted date: 6 September 2017

Please cite this article as: Behzad Mirmahboub , Mohamed Lamine Mekhafi , Vittorio Murino , Person Re-identification by Order-Induced Metric Fusion, *Neurocomputing* (2017), doi: 10.1016/j.neucom.2017.09.019

Person Re-identification by Order-Induced Metric Fusion

Behzad MIRMAHBOUB, Mohamed Lamine MEKHAFI and Vittorio MURINO[1,2]

[1] Department of Pattern Analysis and Computer Vision (PAVIS), Istituto Italiano di Tecnologia (IIT), Via Morego, 30, 16163, Genova, Italy
[2] Dipartimento di Informatica University of Verona Ca' Vignal 2, Strada Le Grazie 15 37134 Verona, Italy

Email: {Behzad.Mirmahboub, Mohamed.Mekhalfi, Vittorio.Murino}@iit.it

Abstract
This paper presents a novel two-pronged framework for person re-identification. Its idea articulates over the fact that distinct descriptors manifest different ranking scores for the same probe pattern. Thus, if conveniently fused, the descriptors in hand are ought to compensate each other, leading to significant improvements. In this respect, this paper proposes a learning-free weighting method that penalizes and averages the re-identification estimates (e.g., distances) pointed out by different descriptors according to their confidence in evidencing the correct match, to a given probe person, among a given gallery. We particularly show that tangible improvements can be attained with respect to utilizing each descriptor individually. Moreover, we consider a confidence measure mechanism that treats the mutual pairwise distances within the gallery, in order to raise the scores obtained at the fusion stage, and we show that interesting improvements can be achieved. We evaluate the proposed framework on four benchmark datasets and advance late works by large margins.

I. INTRODUCTION

Owing to the rise of affordable processing means, extensive computer vision research has been gaining ground lately. This has marked the onset of many ongoing vision tasks, instances encompass human action recognition [1], anomaly detection [2], and tracking [3].

One of the mainstream applications that has been growing rapidly is person re-identification (re-id, for short), which stands for identifying the co-occurrence of individuals across a network of two or more disjoint cameras. Re-id is deemed an interesting but challenging research topic. Interesting because it can save worthy amounts of time and human labor in matching individuals from typically lengthy videos, especially in crowded scenes. Another byproduct of re-id is that it can assist carrying out several functions