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A Parameter-free Label Propagation Algorithm for Person Identification in Stereo Videos

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Abstract

Motivated by relaxing expensive and laborious person identity annotation in stereo videos, a number of research efforts have recently been dedicated to label propagation. In this work, we propose two heuristic label propagation algorithms for annotating person identities in stereo videos under the observation that the actors in two consecutive facial images in a video are more likely to be identical. In the light of this, after adjacent video frames divided into several groups, we propose our first algorithm (i.e. ZBLC4) to automatically annotate the unlabeled images with the one having the maximum summed similarity between unlabeled and labeled images in each group in the parameter-free manner. Moreover, to cope with singleton groups, an additional classifier is introduced into ZBLC4 algorithm to mitigate the suffering of unreliable prediction dependent on neighbours. We conduct experiments on three publicly-benchmarking stereo videos, demonstrating that our algorithms are superior to the state-of-the-arts.

Keywords: Label Propagation, Stereo videos, Parameter-free, Semi-supervised

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