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Tong Hao, Dan Wu, Qian Wang, Jin-Sheng Sun

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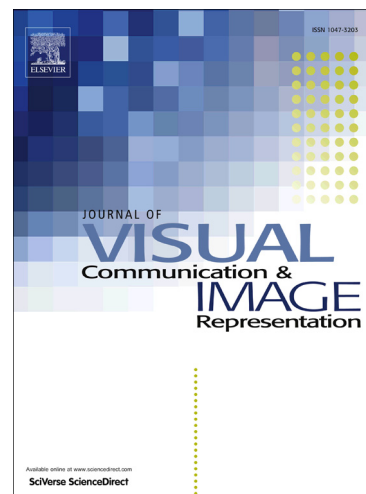
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Multi-View Representation Learning for Multi-View Action Recognition

Tong Hao^a, Dan Wu^a, Qian Wang^a, Jin-Sheng Sun^{a,b,*}

^a*Tianjin Key Laboratory of Animal and Plant Resistance/College of Life Science,
Tianjin Normal University, Tianjin 300387, China*

^b*Tianjin Aquatic Animal Infectious Disease Control and Prevention Center, Tianjin
300221, China*

Abstract

Although multiple methods have been proposed for human action recognition, the existing multi-view approaches can not well discover meaningful relationship among multiple action categories from different views. To handle this problem, this paper proposes an multi-view learning approach for multi-view action recognition. First, the proposed method leverages the popular visual representation method, bag-of-visual-words (BoVW) / fisher vector (FV), to represent individual videos in each view. Second, the sparse coding algorithm is utilized to transfer the low-level features of various views into the discriminative and high-level semantics space. Third, we employ the multi-task learning (MTL) approach for joint action modeling and discovery of latent relationship among different action categories. The extensive experimental results on M²I and IXMAS datasets have demonstrated the effectiveness of our proposed approach. Moreover, the experiments further demonstrate that the discovered latent relationship can benefit multi-view model learning to augment the performance of action recognition.

Keywords: multi-view learning, multi-task learning, sparse coding, action recognition

1. Introduction

With the rapid development of human computer interaction, action-centric video indexing and retrieval, video surveillance, and so on, human action

*Corresponding author: Jin-Sheng Sun, Email: jinshsun@163.com

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