

Accepted Manuscript

Multi-task based Object Tracking via a Collaborative Model

Yong Wang, Xinbin Luo, Lu Ding, Shiqiang Hu

PII: S1047-3203(18)30196-2

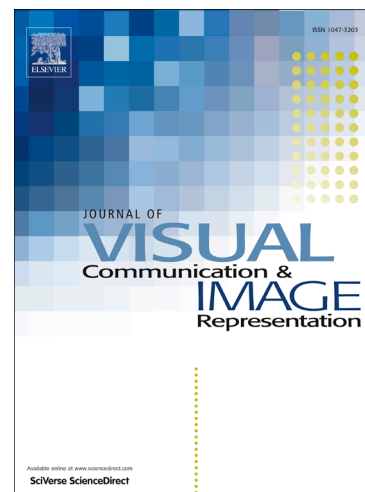
DOI: <https://doi.org/10.1016/j.jvcir.2018.08.008>

Reference: YJVICI 2257

To appear in: *J. Vis. Commun. Image R.*

Received Date: 30 May 2017

Accepted Date: 11 August 2018



Please cite this article as: Y. Wang, X. Luo, L. Ding, S. Hu, Multi-task based Object Tracking via a Collaborative Model, *J. Vis. Commun. Image R.* (2018), doi: <https://doi.org/10.1016/j.jvcir.2018.08.008>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Multi-task based Object Tracking via a Collaborative Model

Yong Wang

*School of Electrical Engineering and Computer Science, University of Ottawa, Ottawa
Canada*

Xinbin Luo

*School of Electronic information and Electrical Engineering, Shanghai Jiao Tong
University, Shanghai, China*

Lu Ding

School of Aeronautics and Astronautics, Shanghai Jiao Tong University, Shanghai, China

Shiqiang Hu

School of Aeronautics and Astronautics, Shanghai Jiao Tong University, Shanghai, China

Abstract

This paper presents a multi-task based object tracking algorithm via a collaborative model. Under the framework of particle filtering, we develop a multi-task sparse learning based generative and discriminative classifier model. In the generative model, we propose a histogram based subspace learning method which takes advantage of adaptive templates update. In the discriminative model, we introduce an effective method to compute the confidence value which assigns more weights to the foreground than the background. A decomposition model is employed to take the common features and outliers of each particle into consideration. The alternating direction method of multipliers (ADMM) algorithm guarantees the optimization problem can be solved robustly and accurately. Qualitative and quantitative comparisons with nine state-of-the-art methods demonstrate the effectiveness and efficiency of our method in handling

*Corresponding author

Email address: systemcontrol@126.com (Xinbin Luo)

Download English Version:

<https://daneshyari.com/en/article/11002841>

Download Persian Version:

<https://daneshyari.com/article/11002841>

[Daneshyari.com](https://daneshyari.com)