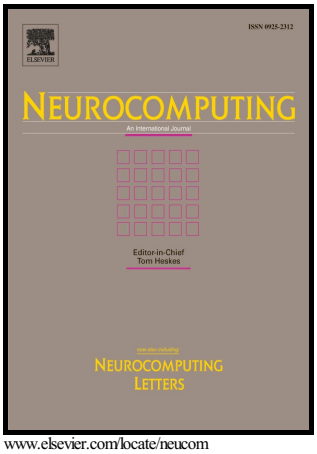
Author's Accepted Manuscript



www.elsevier.com/locate/neucom

Kernel joint visual tracking and recognition based on structured sparse representation

Xiao Yun, Zhong-Liang Jing

PII: S0925-2312(16)00204-6
DOI: http://dx.doi.org/10.1016/j.neucom.2016.02.024
Reference: NEUCOM16749

To appear in: *Neurocomputing*

Received date: 14 January 2015
Revised date: 7 December 2015
Accepted date: 8 February 2016

Cite this article as: Xiao Yun and Zhong-Liang Jing, Kernel joint visual tracking and recognition based on structured sparse representation, *Neurocomputing* http://dx.doi.org/10.1016/j.neucom.2016.02.024

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 galley proof before it is published in its final citable 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.

ACCEPTED MANUSCRIPT

Kernel joint visual tracking and recognition based on structured sparse representation

Xiao Yun, Zhong-Liang Jing*

Shanghai Jiao Tong University, School of Aeronautics and Astronautics, Shanghai 200240, China

Accepted manuscript

Abstract

Visual target tracking and recognition are closely interrelated and can help each other potentially and significantly. The optimal Bayes joint decision and estimation (JDE) model guarantees the general decision (recognition) and estimation (tracking) arriving at the global optimization. In this paper, a kernel joint tracking and recognition (KJTR) algorithm is proposed to apply JDE to the simultaneous visual tracking and recognition problem and use the iteration learning procedure to achieve optimization. Besides, the structured sparse representation (SSR) model shows great efficiency and robustness in exploiting both holistic and local information of the target appearance. We show that constructing the appearance model with SSR can improve the performance of the proposed algorithm. Then, the contribution of each test candidate is considered into the learning procedure by a kernel function. Furthermore, the new joint weights of KJTR provide flexibility with appearance changes and thus robustness to the dynamic scene. The experimental results demonstrate that the KJTR algorithm performs well in terms of accuracy and robustness.

Keywords: joint visual tracking and recognition; joint decision and estimation; structured sparse representation; kernel function; joint weight

[☆]Fully documented templates are available in the elsarticle package on CTAN.

[1]Since 1880.

Download English Version:

https://daneshyari.com/en/article/6865426

Download Persian Version:

https://daneshyari.com/article/6865426

Daneshyari.com