

Author's Accepted Manuscript

Query-expanded collaborative representation based classification with class-specific prototypes for object recognition

Meng Wu, Jun Zhou, Jun Sun



PII: S0031-3203(14)00196-4
DOI: <http://dx.doi.org/10.1016/j.patcog.2014.05.011>
Reference: PR5117

To appear in: *Pattern Recognition*

Received date: 3 July 2013
Revised date: 25 April 2014
Accepted date: 14 May 2014

Cite this article as: Meng Wu, Jun Zhou, Jun Sun, Query-expanded collaborative representation based classification with class-specific prototypes for object recognition, *Pattern Recognition*, <http://dx.doi.org/10.1016/j.patcog.2014.05.011>

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.

Query-expanded collaborative representation based classification with class-specific prototypes for object recognition

Meng Wu^{a,b,*}, Jun Zhou^{a,b}, Jun Sun^{a,b}

^a*Institute of Image Communication and Information Processing, Department of Electronic Engineering, Shanghai Jiao Tong University, Shanghai 200240, China*

^b*Shanghai Key Laboratory of Digital Media Processing and Transmissions, Shanghai Jiao Tong University, Shanghai 200240, China*

Abstract

Linear representation based classifiers (LinearRCs) assume that a query image can be represented as a linear combination of dictionary atoms or prototypes with various priors (e.g., sparsity), which have achieved impressive results in face recognition. Recently, a few attempts have been made to deal with more general cases (e.g., multi-view or multi-pose objects, more generic objects, etc.) but with additional requirements. In this paper, we present a query-expanded collaborative representation based classifier with class-specific prototypes (QCRC-CP) from the general perspective. First, we expand a single query in a multi-resolution way to cover rich variations of object appearances, thereby generating a query set. We then condense the gallery images to a small amount of prototypical images by maximizing canonical correlation in a class-specific way, in which the implicit query-

*Correspondence author. Department of Electronic Engineering, Shanghai Jiao Tong University, Shanghai 200240, China. Tel. +8602134204002

Email address: wmeng@sjtu.edu.cn (Meng Wu)

Download English Version:

<https://daneshyari.com/en/article/10360332>

Download Persian Version:

<https://daneshyari.com/article/10360332>

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