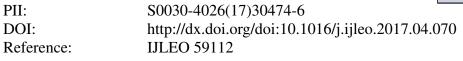
Accepted Manuscript

Title: Using Kernel Sparse Representation to Perform Coarse-to-Fine Recognition of Face Images

Author: Shaoning Zeng Xiong Yang Jianping Gou



To appear in:

Received date:	9-8-2016
Accepted date:	19-4-2017

Please cite this article as: Shaoning Zeng, Xiong Yang, Jianping Gou, Using Kernel Sparse Representation to Perform Coarse-to-Fine Recognition of Face Images, <*!*[*CDATA[Optik - International Journal for Light and Electron Optics]]>* (2017), http://dx.doi.org/10.1016/j.ijleo.2017.04.070

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.



ACCEPTED MANUSCRIPT

Using Kernel Sparse Representation to Perform Coarse-to-Fine Recognition of Face Images

Shaoning Zeng^{a,*}, Xiong Yang^{a,1}, Jianping Gou^{b,2}

^a46 Yanda Road, Huizhou, Guangdong, China ^b301 Xuefu Road, Zhenjiang, Jiangsu, China

Abstract

Feature space-based face recognition method performs representation and classification for face images in the feature space instead of the original space. This representation-based method uses kernel function to solve the feature space and therefore outperforms the method working in original space. A contemporary coarse-to-fine face recognition method also uses the idea of sparse representation but separates the classification into two stages from coarse candidate to fine classification. They both apply the sparse representation technique for image classification, but we believe that there is still space to improve the robustness of sparse representation in these methods. We proposed a novel method integrating both methods together to perform robust face image classification. This method also consists of two stages as sparse representation-based coarse-to-fine classification. In the first stage, however, the coarse candidate classes are determined in the feature space selected by the kernel function instead, which is the key technique used in the feature space-based method. And then in the next stage, fine classification is performed to assign the test sample into a class from candidate classes. The experimental results demonstrated that this novel integrated method outperforms both methods on prevailing benchmark facial datasets.

Preprint submitted to Journal of LATEX Templates

August 9, 2016

^{*}Corresponding author

Email address: zsnCoutlook.com (Shaoning Zeng)

¹Email: xyang.2010@hzu.edu.cn, Department of Computer Science, Huizhou University.

 $^{^2{\}rm Email:}$ goujianping@ujs.edu.cn, College of Computer Science and Communication Engineering, Jiangsu University.

Download English Version:

https://daneshyari.com/en/article/5025501

Download Persian Version:

https://daneshyari.com/article/5025501

Daneshyari.com