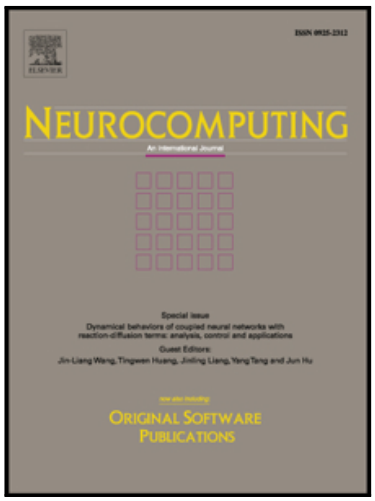
Accepted Manuscript



Synthesis Linear Classifier Based Analysis Dictionary Learning for Pattern Classification

Jiujun Wang, Yanqing Guo, Jun Guo, Ming Li, Xiangwei Kong

PII: S0925-2312(17)30115-7
DOI: 10.1016/j.neucom.2017.01.041
Reference: NEUCOM 17940

To appear in: *Neurocomputing*

Received date: 26 February 2016
Revised date: 13 January 2017
Accepted date: 16 January 2017

Please cite this article as: Jiujun Wang, Yanqing Guo, Jun Guo, Ming Li, Xiangwei Kong, Synthesis Linear Classifier Based Analysis Dictionary Learning for Pattern Classification, *Neurocomputing* (2017), doi: 10.1016/j.neucom.2017.01.041

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

Synthesis Linear Classifier Based Analysis Dictionary Learning for Pattern Classification

Jiujun Wang, Yanqing Guo*, Jun Guo, Ming Li, Xiangwei Kong

School of Information and Communication Engineering, Dalian University of Technology, Dalian 116024, Liaoning Province, China

Abstract

Dictionary learning approaches have been widely applied to solve pattern classification problems and have achieved promising performance. However, most of works aim to learn a discriminative synthesis dictionary and sparse coding coefficients for classification. Until recent years, analysis dictionary learning began to attract interest from researchers. In this paper, we present a novel discriminative analysis dictionary learning frame, named Synthesis Linear Classifier based Analysis Dictionary Learning (SLC-ADL). Firstly, we incorporate a synthesis-linear-classifier-based error term into the basic analysis dictionary learning model, whose classification performance is obviously improved by making full use of the label information. Then, we develop an alternating iterative algorithm to solve the new model and obtain closed-form solutions leading to pretty competitive running efficiency. What's more,

☆This work is funded by the National Natural Science Foundation of China (Grant No. 61402079, 61172109), the Foundation for Innovative Research Groups of the NSFC (Grant No. 71421001), the Open Project Program of the National Laboratory of Pattern Recognition (NLPR), and the Fundamental Research Funds for the Central Universities (Grant No. DUT14RC(3)103).

*Corresponding author: Yanqing Guo

Email address: guoyq@dlut.edu.cn (Yanqing Guo)

ACCEPTED MANUSCRIPT

Download English Version:

https://daneshyari.com/en/article/4947610

Download Persian Version:

https://daneshyari.com/article/4947610

Daneshyari.com