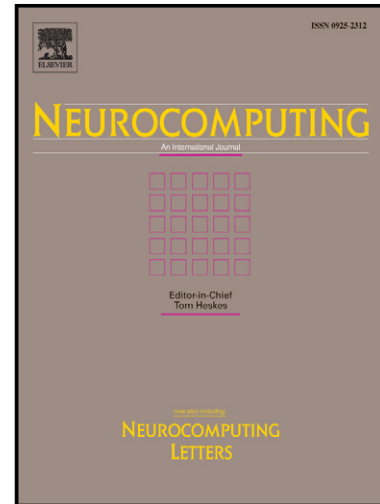


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Multi-view Multi-sparsity Kernel Reconstruction for Multi-class Image Classification

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Abstract

This paper addresses the problem of multi-class image classification by proposing a novel multi-view multi-sparsity kernel reconstruction (MMKR for short) model. Given images (including test images and training images) representing with multiple visual features, the MMKR first maps them into a high-dimensional space, e.g., a reproducing kernel Hilbert space (RKHS), where test images are then linearly reconstructed by some representative training images, rather than all of them. Furthermore a classification rule is proposed to classify test images. Experimental results on real datasets show the effectiveness of the proposed MMKR while comparing to state-of-the-art algorithms.

Keywords: image classification, multi-view classification, sparse coding, Structure sparsity, Reproducing kernel Hilbert space

1. Introduction

In image classification, an image is often represented by its visual feature, such as HSV (Hue, Saturation, Value) color histogram, LBP (Local Binary Pattern), SIFT (Scale invariant feature transform), CENTRIST (CENSus TRansform hISTgram), and so on. Usually, different representations describe different char-

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