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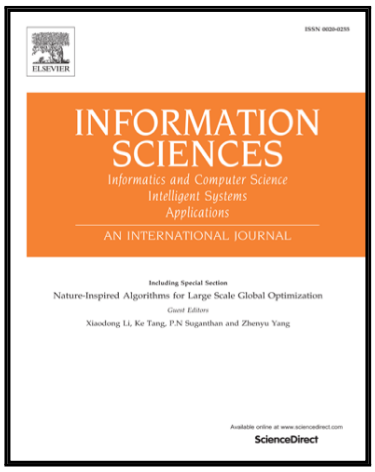

Multi-view Clustering based on Graph-regularized Nonnegative Matrix Factorization for Object Recognition

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Multi-view Clustering based on Graph-regularized Nonnegative Matrix Factorization for Object Recognition

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Abstract

Various datasets from sensors are used for object recognition, and different features may be extracted from the same dataset in processing. Different datasets thus describe representations or views of the same object. Fusing the information from this multi-view dataset can improve recognition performance. However, such different views have varying quality levels. In this paper, we discuss multi-view clustering based on graph-regularized nonnegative matrix factorization with fusing useful information effectively to improve recognition accuracy. Useful information is enhanced via graph embedding, and redundant information is removed using the orthogonal constraint in each view for clustering. Experimental results on several real datasets demonstrate the effectiveness of our approach in improving the clustering performance of datasets.

Keywords: Multi-view, clustering, Nonnegative Matrix Factorization(NMF), Graph Regularization, orthogonal constraint

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