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A cluster-filter feature selection approach

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I. Introduction

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In this paper, a feature selection method is presented for the multiclass data sets. This method is the hybridization of k-means clustering using cosine similarity as a distance measure and information Gain. In the method unsupervised Cosine Similarity is used for grouping of features i.e. K-means clustering is used to make a cluster of features and then

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In this paper, a feature selection method is presented for the multiclass data sets. This method is the hybridization of k-means clustering using cosine similarity as a distance measure and information Gain. In the method unsupervised Cosine Similarity is used for grouping of features i.e. K-means clustering is used to make a cluster of features and then information gain is employed to select a most relevant feature from each cluster. The dataset with the selected feature is tested for classification accuracy with cross-validation approach. Three classifiers namely Naive Bayes (NB), K-Nearest Neighbor and Classification and Regression trees (CART) has been used as the base classifiers for getting classification accuracy. Obtained results are compared with filter-based feature selection technique (Information Gain).

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I. Introduction

Multiclass High-dimensional datasets classification is very problematic due to the property of the datasets that numbers of patterns are very less compared to a number of features. Curse of Dimensionality [7] plays a big role in the classification problem. Since classification is an indispensable part of data mining [1], machine learning [2] or pattern recognition [3], there must be some device for which classification should be good as much as possible with

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