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Enhanced SMOTE algorithm for classification of imbalanced big-data using Random Forest

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Abstract:

In the era of big data, the applications generating tremendous amount of data are becoming the main focus of attention as the wide increment of data generation and storage that has taken place in the last few years. This scenario is challenging for data mining techniques which are not arrogated to the new space and time requirements. In many of the real world applications, classification of imbalanced data-sets is the point of attraction. Most of the classification methods focused on two-class imbalanced problem. So, it is necessary to solve multi-class imbalanced problem, which exist in real-world domains. In the proposed work, we introduced a methodology for classification of multi-class imbalanced data. This methodology consists of two steps: In first step we used Binarization techniques (OVA and OVO) for decomposing original dataset into subsets of binary classes. In second step, the SMOTE algorithm is applied against each subset of imbalanced binary class in order to get balanced data. Finally, to achieve classification goal Random Forest (RF) classifier is used. Specifically, oversampling technique is adapted to big data using MapReduce

so that this technique is able the performance of proposed and the proposed system is that proposed method outpe

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I. Introduction

The appearance of information technology in various filed of our life lead to the massive amount of data storage in various formats like records, documents, images, sound recordings, and scientific data and so on. Now-a-days the data is collected from various domains and it sequires well defined methods for extracting knowledge or information from this data for better decision making. Knowledge discovery in database often called as Data Mining. Data mining came into existence due to the perception of —we are data rich but information poor.

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