Abstract

In Machine learning tasks, mainly in classification problems, the performance measures are of major concern in order to determine and compare the performance of classification methods. In classification problem the accuracy of the classifier is one of the most important performance measures commonly used. However, computing performance in the dynamic environment learning offered for concept drifting data streams also requires some performance considerations as compared to classification tasks in static environment. Furthermore, the learning and testing strategies widely used for training and testing of classifiers of static environments cannot be utilized efficiently to meet the requirements of concept drifting data stream mining as the main requirement of online leaning is to perform one pass incremental learning on large datasets conversely to the allowable iterative learning in static environment with small datasets. This paper describes some important performance measures and learning and testing strategies pertaining to online and incremental learning in the presence of concept drifting data streams. Furthermore, this paper also presents performance measures of drift detection methods widely used as an explicit component in many concept drifting data stream
mining algorithms.

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Index Terms

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Keywords

Data Streams, dynamic environments, classifiers, ensemble learning, online methods.