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Abstract

Tuberculosis (TB) is a disease caused by bacteria called Mycobacterium tuberculosis. It usually spreads through the air and attacks low immune bodies such as patients with Human Immunodeficiency Virus (HIV). Association Rule Mining (ARM) is one of the most popular approaches in data mining and if used in the medical domain has a great potential to improve disease prediction. This results in large number of descriptive rules. Therefore ARM can be integrated within classification task to generate a single system called as Associative classification(AC) which is a better alternative for predictive analytics. Rule evaluation plays an important role in the rule learning and classification process under Associative classification. Laplace accuracy has been widely used in algorithms such as Classification based on Predictive Association Rules (CPAR) and Predictive Rule Mining (PRM). In this paper we propose to use CPAR, PRM and First Order Inductive Learner(FOIL) with Statistical test along

with Laplace accuracy as rule evaluation measures with different testing modes. We analyze the performance of these methods on TB data with two classes Pulmonary Tuberculosis (PTB) and Retroviral PTB (RPTB) that is those having TB with HIV. This approach helps in the selection of more suitable measure on a particular testing strategy. Results show that CPAR and PRM are almost same and better in accuracy and the number of rules compared to FOIL. Unfortunately when compared in terms of measures the result is same but generation time is less under statistical measure and also rule ordering differs.

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Index Terms

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Key words

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Associative classification

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