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STATISTICAL ANALYSIS FOR MEDICAL DIAGNOSTICS USING FUZZY TECHNIQUES

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ABSTRACT

Medical diagnosis of diseases is a highly complicated and time consuming process involving skilled resources and high-end diagnostic tools. This study aims at developing working rules based on sample observations from real-time data observed over a period of 6 months in an outpatient facility available at a Hospital in Chennai. The main objective is to identify the best classification procedure/method based on accuracy measures such as maximum correct classification rate and True Positive Rate (TPR). The data has been analyzed using two classification algorithms, namely Fuzzy Composition Rules (Fuzzy Max-Min, Max-Prod & Max-Avg) and Logistic Regression. The results of the analysis showed that Fuzzy Max-Product (or Max-Average) is the better model to predict the TB diagnostics based on the corresponding symptom features.

KEYWORDS: Classification, Fuzzy Logic, Max-Min Composition Rule, Logistic Regression