Decision Support System for Cardiovascular Heart Disease Diagnosis using Improved Multilayer Perceptron

Abstract

Medical science industry has huge amount of data, but most of this data is not mined to find out hidden information in data. Diagnosing of heart disease is one of important issue to develop medical decision support system which will help the physicians to take effective decision. This paper discusses standard Multilayer perceptron algorithm and analyzes its behavior. This paper proposes an Improved Multilayer perceptron algorithm which divides datasets into multiple subsets. Then MLP algorithm was called individually for each subset and results obtained from different subsets are combined using voted combiner with majority probability rule. Finally, performance of these techniques is measured through sensitivity, specificity, accuracy and ROC. Improved MLP approach significantly outperforms MLP approach in overall execution time. Experimental Result shows that Improved MLP algorithm gives better results than MLP algorithm. In our study, 10-fold cross validation method is used to measure the unbiased estimate of the model. Cleveland, Hungarian and Switzerland datasets are used for empirical comparisons.

References
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Index Terms

| Computer Science | Artificial Intelligence |

Keywords

| Heart Disease | Artificial Neural Network | Multilayer Perceptron | Supervised Learning |