Abstract

Cardiovascular Disease (CVD) is the main problems of morbidity and mortality in the current lifestyle. The prediction of heart disease is the most complicated task in the field of medical sciences. Data mining techniques have been widely applied in bioinformatics to analyze biomedical data. Today, the field of medicine has come a long way to treat patients with various types of diseases. Heart disease is one of the most threatening diseases that cannot be seen with the naked eye. Poor and incorrect clinical decisions result in the death of a patient who cannot be authorized. Today the health sector contains a large amount of health data, which contain hidden information. Advanced data extraction techniques and computer-generated information are used for predicting heart disease at an earlier stage. In this paper, classification techniques such as Deep Belief Network (DBN) and Fuzzy Deep Belief Network (FDBN) are proposed and analyzed on the cardiovascular disease dataset. The performance of these techniques is evaluated using evaluation parameter such as accuracy and error rate. From the experimental results, it is proved that the accuracy of the Fuzzy Deep Belief network is superior to the Deep Belief network. Further the analysis of the experiment also showed that the FDBN
system is one of the best classification models in efficiently predicting cardiovascular diseases with the lowest error rate and maximum accuracy.

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**Index Terms**

Computer Science  
Artificial Intelligence

**Keywords**

Heart Disease Prediction System, Deep Belief Network, Fuzzy Deep Belief Network classification algorithm.