



Heart Disease Prediction Using Machine Learning In E-Health Care

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ABSTRACT

Heart disease is a major cause of death worldwide, and early detection is crucial for better patient outcomes. The proposed system that predicts the likelihood of heart disease using machine learning algorithms. We use SVM and FCMIM to select the most relevant features from the dataset and classify patients into two categories: with and without heart disease. Our model achieves high accuracy (94%) compared to other models and can be used as a decision support system for early detection and prediction of heart disease.

Keywords: Cardiology, FCMIM, SVM, High accuracy and Fast.

1. INTRODUCTION

The proposed system aims to identify relevant features from the dataset and predict the likelihood of heart disease in patients using Support Vector Machine (SVM) and Fast Correlation-based Feature Selection using Mutual Information (FCMIM) algorithms. The proposed model is evaluated using a publicly available dataset and compared with other machine learning models. The results show that the proposed model achieves high accuracy (94%) and can be used as a decision support system for early detection and prediction of heart disease, which can assist medical professionals in making informed decisions for patient care.

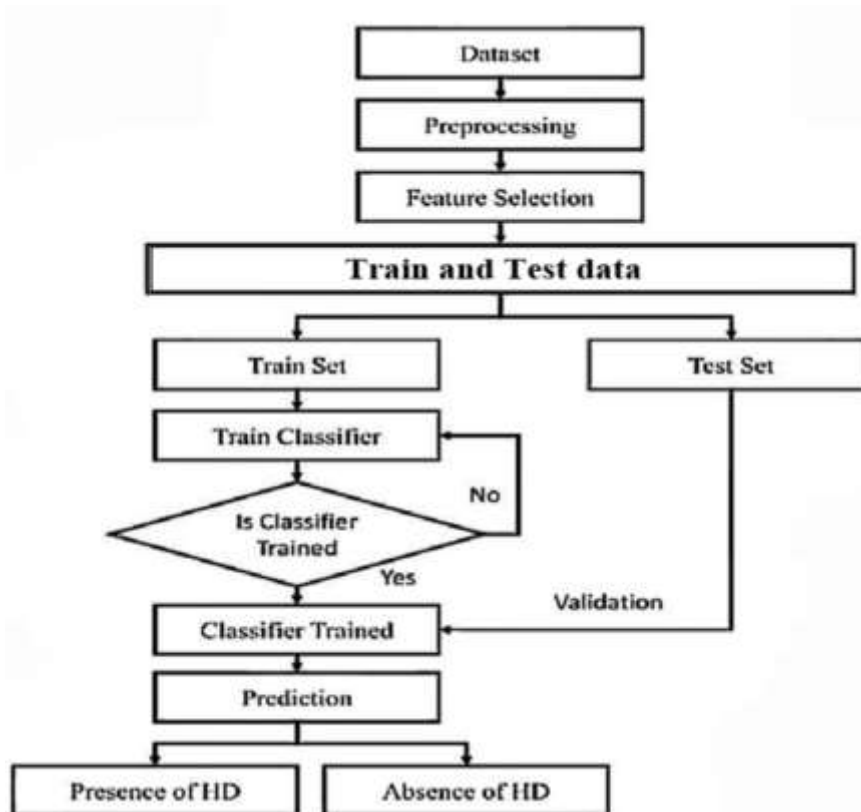


Fig: Block diagram of Heart disease prediction

2. LITERATURE SURVEY

1. Ufaq jeelani khan, Dr.Ashish obero

Research uses prediction analysis to predict heart disease based on current information. Suggests hybrid classifier combining random forest and decision tree classifiers for improved accuracy. Compares various techniques for heart disease prediction in terms of parameters such as SM, Heart Disease, KNN, and Machine learning.

2. Theresa princy, R research scholar

The paper discusses heart disease incidence due to lifestyle and hereditary factors. Different classification techniques are used to predict risk levels based on age, gender, blood pressure, cholesterol, and pulse rate. Data mining techniques explored include Naïve Bayes, KNN, Decision Tree Algorithm, and Neural Network. More attributes result in higher prediction accuracy.

3. Anjan Nikhil Repaka, Sai Deepak Ravikanti

The study utilizes data mining techniques for heart disease risk factor prediction. Navies Bayesian classification and AES encryption are used for secure data transfer. Attributes such as age, blood pressure and blood sugar are collected as input. The study demonstrates that the diagnostic system is effective in predicting heart disease risk factors.

4. Awais Mehmood, Munwar Iqbal

The paper introduces CardioHelp, which utilizes a CNN to predict cardiovascular disease probability by focusing on temporal data modeling for early heart failure detection. Results show that CardioHelp outperforms existing methods with an accuracy of 89%, potentially aiding in preventing heart disease and identifying its major causes.

3. PROBLEM STATEMENT

Nowadays, heart disease is a major health concern, causing a significant number of deaths worldwide. Early detection is crucial, but current diagnostic methods are time-consuming and costly. The proposed system aims to predict the presence or absence of heart disease using Machine Learning algorithms with high accuracy, providing a fast and reliable means of detection to improve patient outcomes and reduce healthcare costs.

4. EXISTING SYSTEM

The system uses deep neural networks to predict the risk of heart disease. The model takes various patient attributes, such as age, gender, and medical history to predict the livelihood of developing heart disease.

DISADVANTAGES:

- Dataset bias: If the data used to train the model is incomplete, the model may make inaccurate predictions..
- Limited accuracy

5. PROPOSED SYSTEM

The proposed system for heart disease prediction involves by using the data in the dataset. The machine learning algorithms such as Support vector machine, FCMIM(Fuzzy conditional mutual information maximization)are used for the prediction. The algorithm is trained on a heart disease dataset and evaluated as per the updated data.

Advantages:

- Using SVM and FCMIM algorithms for heart disease prediction can help in early detection.
- Ability to analyze large amounts of data quickly and accurately, which saves time for healthcare professionals.

6. CONCLUSION

The beforehand and accurate opinion is pivotal for the effective treatment of the complaint. Machine learning algorithms, such as FCMIM and SVM, have been proposed for the diagnosis of heart disease. These algorithms use feature selection and prediction techniques to improve classification accuracy and reduce execution time. In future work, new feature selection methods can be developed to increase the performance of heart disease prediction.

7. REFERENCE

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