

Heart disease prediction using machine learning

Abstract:

In this paper we carried out research on heart disease from data analytics point of view. Prediction of heart disease is a very recent field as the data is becoming available. Other researchers have approached it with different techniques and methods. We used data analytics to detect and predict disease's patients. Starting with a pre-processing phase, where we selected the most relevant features by the correlation matrix, then we applied three data analytics techniques (neural networks, SVM and KNN) on data sets of different sizes, in order to study the accuracy and stability of each of them. Found neural networks are easier to configure and obtain much good results (accuracy of 93%).

Keywords: Machine Learning. Heart Disease prediction detection.

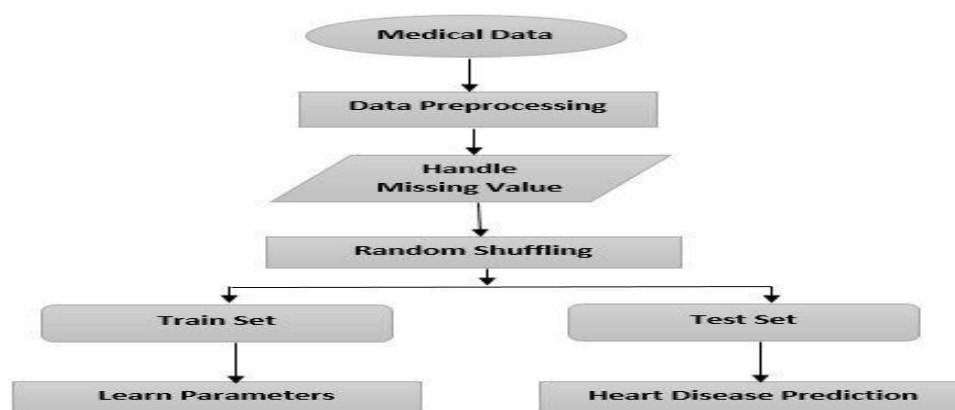
Introduction:

Heart disease is a significant cause of mortality globally, emphasizing the importance of early detection and prevention. Machine learning offers a promising approach to predict heart disease risk by analyzing patient data. Leveraging datasets encompassing demographics, medical history, and lifestyle factors, machine learning models can provide accurate risk assessments and personalized interventions. This article explores the application of machine learning in heart disease prediction, highlighting its potential to enhance patient outcomes and reduce healthcare costs. Through interdisciplinary collaboration and ongoing monitoring, these models can contribute to improving cardiovascular health worldwide.

Libraries: pandas, NumPy, matplotlib, sci-kit learn and seaborn.

Technologies: Decision Trees (DT), Support Vector Machine (SVM), K-Nearest Neighbour's (KNN), Naïve Bayes (NB).

Flowchart:



Conclusion:

our study applied machine learning algorithms to predict heart disease in Algerian individuals. We achieved promising results, with the Neural Network algorithm showing an accuracy of 93%. Our findings highlight the potential of machine learning in early detection efforts, emphasizing the importance of further research and refinement in this area.

