

HCL TECHNOLOGIES

INTERNSHIP

Flow diagram

Topic : Analysis and prediction of Heart diseases.

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Abstract.

Heart-related diseases or Cardiovascular Diseases (CVDs) are the main reason for a huge number of death in the world over the last few decades and has emerged as the most life-threatening disease, not only in India but in the whole world. Day by day the cases of heart diseases are increasing at a rapid rate and it's very Important and concerning to predict any such diseases beforehand . So, there is a need for a reliable, accurate, and feasible system to diagnose such diseases in time for proper treatment. Machine Learning algorithms and techniques have been applied to various medical datasets to automate the analysis of large and complex data. Many researchers, in recent times, have been using several machine learning techniques to help the health care industry and the professionals in the diagnosis of heart-related diseases. Heart is the next major organ comparing to the brain which has more priority in the Human body. It pumps the blood and supplies it to all organs of the whole body. Prediction of occurrences of heart diseases in the medical field is significant work. Data analytics is useful for prediction from more information and it helps the medical center to predict various diseases. A huge amount of patient-related data is maintained on monthly basis. The stored data can be useful for the source of predicting the occurrence of future diseases. Some of the data mining and machine learning techniques are used to predict heart diseases, such as Artificial Neural Network (ANN), Random Forest, and Support Vector Machine (SVM).Prediction and diagnosing of heart disease become a challenging factor faced by doctors and hospitals both in India and abroad. To reduce the large scale of deaths from heart diseases, a quick and efficient detection technique is to be discovered. Data mining techniques and machine learning algorithms play a very important role in this area. The researchers accelerating their research works to develop software with the help of machine learning algorithms which can help doctors to decide both prediction and diagnosing of heart disease. The diagnosis of heart disease in most cases depends on a complex combination of clinical and pathological data. Because of this complexity, there exists a significant amount of interest among clinical professionals and researchers regarding the efficient and accurate prediction of heart disease. In this paper, we develop a heart disease predict system that can assist medical professionals in predicting heart disease status based on the clinical data of patients. Our approaches for creating machine learning prediction system include three steps. Firstly, we select 13 important clinical features,

i.e., age, sex, chest pain type, trestbps, cholesterol, fasting blood sugar, resting ecg, max heart rate, exercise induced angina, old peak, slope, number of vessels coloured, and thal. Secondly, we develop an artificial neural network algorithm for classifying heart disease based on these clinical features. The accuracy of prediction is near 80%. Finally, we develop a user-friendly heart disease predict system (HDPS). The HDPS system will be consisted of multiple features, including input data section and prediction performance display section (accuracy and predict result). Our approaches are effective in predicting the heart disease of a patient. The HDPS system developed in this study is a novel approach that can be used in the classification of heart disease. This diagnosis is a difficult task i.e. it should be performed precisely and efficiently. This project mainly focuses on which patient is more likely to have a heart disease based on various medical attributes. We prepared a heart disease prediction system to predict whether the patient is likely to be diagnosed with a heart disease or not using the medical history of the patient. We used machine learning algorithm KNN to predict and classify the patient with heart disease. A quite Helpful approach was used to regulate how the model can be used to improve the accuracy of prediction of Heart Attack in any individual. The strength of the proposed model was quiet satisfying and was able to predict evidence of having a heart disease in a particular individual by using KNN which showed a good accuracy etc. So a quiet significant amount of pressure has been lift off by using the given model in finding the probability of the classifier to correctly and accurately identify the heart disease. The Given heart disease prediction system enhances medical care and reduces the cost. This project gives us significant knowledge that can help us predict the patients with heart disease. The main objective of this research project is to predict the heart disease of a patient using machine learning algorithm namely KNN. It is implemented on the .pynb format. Two GUI screens have been created using html for the user to give their respective input. The obtained machine learning model has been deployed using flask.

