

HEART DISEASES PREDICTION

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ABSTRACT

Now a days health problems are causing more effect on human, one of the main health disease is cardiac disease. Prediction of the disease in the earlier stage and giving treatment has been a big problem now a days. The healthcare data can be used to develop a health prediction system that can improve prediction of health disease. Collecting data from healthcare centres about patient records, diagnosis, scan reports and health conditions can aid in the phase of disease identification and prediction. The machine learning method offers an important techniques for forecasting cardiac diseases. An advanced logistic regression classifier is used by the program to conduct improve classification based on probability , accuracy and performance. The proposed work aims to develop a real-time prediction system for health issues based on big medical data processing on the cloud. In this system , the prediction rate is higher.

Keywords: : *Health Parameters, Machine learning algorithms, logistics regression, heart disease.*

1. INTRODUCTION

Around 40% to 50% of the people around the world suffer from at least one heart related issue and a heavy amount of money is being spent on chronic disease treatments. USA alone spent's almost 2.7 trillion dollars per annum on such treatments. It is not the only country that spent's large amount of money on Chronic disease treatments . For example in China , majority of deaths are because of chronic diseases. Each year around 17.5 million people die due to heart related issues.

Heart is one of the major organs of our body, its health affects our day to day life. Its well being is on of the major factor that determines someone's overall performance. Health of heart can be determined by several factors like Chest pain, Resting blood pressure, Cholesterol level, maximum heart rate etc.

Since digital technologies are rapidly growing , several models have been developed to estimate a person's risk for a coronary disease. These models use the concept of multivariate regression analysis. Many machine learning algorithms play vital roles in the type of analysis. These models consider several factors like chest pain, age , gender, BP, HR etc to estimate the risk.

Machine learning algorithms and analysis techniques can be used to predict the health problems . It will help people get health hazards information sooner and get health problems warning. It can also help in advanced diagnosis for treatments and providing recommendations. Here we also try to build a model which will predict whether a person has a heart disease or not based on the inputs provided. We will use Logistics Regression to build our model and divide the dataset into training to train the model and testing to calculate its Accuracy.

2. LITERATURE REVIEW

There are numerous works has been done related to disease prediction systems using different data mining techniques and machine learning algorithms in medical centres.

M. Marimuthu has proposed prediction of Heart Disease using Machine learning algorithms particularly CNN and Data analytic methods. The program approach offered a broad computer structure that manages EHR computer focused on streaming data from connected medical devices and patient history for patients. The proposed method relies on the main parameters for the SVM based on tanning

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Setting the weights threshold
Preparing the list of the feature (LF)
For number 1 to length(weights)
If weights >= threshold
    Applying      (lambda Value:
    Value> Threshold of the dataset).
Add a new entry in (LF) as a new column
Implement the partitioning using
Crossvalidation
Implement b starting to train and test the
system using Cross-validation on the dataset
Evaluation.
Prediction
Visualization
END
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Viren Viraj Shankar has proposed prediction of Heart Disease using Machine learning algorithms

for these parameters. [1]

Algorithm they used

Algorithm 1
Starts Loading the dataset of Heart disease pre- processing with cleaning data providing the model script

particularly CNN .

They used Adam optimization is an alternative to the normally used stochastic gradient descent to update neural network weights iteratively, based on training data fed, sigmoid function as a activation function in cnn method and concluded that CNN is also a best method for prediction of heart disease[2].

K. Madhankumar has proposed prediction of Heart Disease using data mining and machine learning algorithm, as identified through the literature survey, believe only a marginal success is achieved in the creation of predictive model for heart disease patients and hence there is a need for combinational and more complex models to increase the accuracy of the predicting the early onset of heart disease. With the more amount of data being fed into the database the system will be very intelligent. [3]

5. DISCUSSION

The need for applying machine learning algorithms on available large medical data rather than traditional methods became one of the most driving research topics in healthcare. The article presented mainly an efficient architecture to work with streamdata from different wearable devices in the healthcare systems. The proposed healthcare system employs Microsoft Azure instead of using a standalone server to work with streaming data.

6. CONCLUSION AND FUTURE WORK

By using different types of machine learning techniques to predict the occurrence of heart disease have summarized. Determine the prediction performance of each algorithm and apply the proposed system for the area it needed. Use more relevant feature selection methods to improve the accurate performance of algorithms. There are several treatment methods for patient, if they once diagnosed with the particular form of heart disease.

Convolutional logistic regression method is a means for early heart disease risk determination using structured data. The accuracy obtained using our model is high than any other methods. For future endeavors, we propose to extend our algorithm to incorporate unstructured data as well. As of now, all attributes and laboratory tests considered have been approved by medical doctors

[3]

M. Marimuthu, M. Abinaya, K. S. Hariesh UG Scholar
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Coimbatore , using data mining and machine learning techniques.

REFERENCES:

[1] M. Marimuthu ,M. Abinaya, K. S. Hariesh,,
Madhankumar ,V. Pavithra UG Scholar
Coimbatore Institute of Technology Coimbatore.
**A Review on Heart Disease Prediction using
Machine Learning and Data Analytics
Approach**

[2]VirenViraj Shankar ,Varun Kumar1 ·
Umesh Devagade1 ,Vinay Karanth1 ·K. Rohitk
shal
**Heart Disease Prediction Using CNN
Algorithm**
