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TECHNICAL SEMINAR WRITUP

ABSTRACT:

Heart disease, alternatively known as cardiovascular disease, encases various conditions that impact the heart and is the primary basis of death worldwide over the span of the past few decades.

This research paper presents various attributes related to heart disease, and the model on basis of supervised learning algorithms as Naïve Bayes, decision tree, K-nearest neighbor, and random forest algorithm. It uses the existing dataset from the Cleveland database of UCI repository of heart disease patients.

The mode implemented aims to envision the probability of developing heart disease in the patients. It can also be helpful to the medical practitioners at their clinic as decision support system. The results portray that the highest accuracy score is achieved with Naïve Bayes.

DETAILED DESCRIPTION OF MODULES IMPLEMENTED

Aim of this research is to predict whether or not a patient will develop heart disease. This research was done on supervised machine learning classification techniques using Naïve Bayes, Decision Tree, Random Forest, K-nearest Neighbor and Support Vector Machines on UCI repository.

Dataset was classified and split into a training set (75%) and a test set (25%). Pre-processing of the data is done and supervised classification techniques mentioned above are applied to get accuracy score. The accuracy score results of different classification techniques were noted using for training and test data sets.

After this, Cross Validation techniques and Hyper Parameter Tuning was performed on the dataset to improve the testing accuracies of the implemented algorithms.

It was found that the accuracies of different algorithms have been improved after performing cross validation and hyperparameter tuning techniques on the dataset.

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NEW LEARNINGS FROM THE TOPIC

During this research, I learnt about

- The importance of machine learning domain in the medical field.
- The benefits of predicting heart disease before hand.
- Few data preprocessing methods used on the dataset.
- Five machine learning models implemented to predict the heart disease.
- Cross validation and Hyperparameter tuning techniques used to improve the accuracy of algorithms implemented.