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IMPLEMENTING THE DECISION TREE CLASSIFIER AND PREDICT DISEASE USING MACHINE LEARNING

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ABSTRACT: The proposed system is grounded on prophetic modeling it predicts the complaint name of the user on the base of the symptoms that user provides as an input to the system. The system analyzes the symptoms handed by the user as input and gives the probability of the complaint as an output Disease Prediction is done by enforcing the Decision tree Classifier. Decision tree Classifier calculates the probability of the complaint. With big data growth in biomedical and health care communities, accurate analysis of medical data benefits early complaint discovery, patient care.

Predict Disease by looking at the symptoms is an integral part of treatment. We have used Decision Tree algorithm for this purpose and gained an accuracy of 92-95%. Such a system can have a very large potential in medical treatment of the future. We have also designed an interactive interface to facilitate interaction with the system. We've also tried to show and visualized the result of our study and this design.

INTRODUCTION

Health information needs are also changing the information seeking behavior and can be observed around the globe. Challenges faced by many people are looking online for health information regarding diseases,diagnosesand different treatments that will take lot of time and waste of money. If a recommendation system like a predictor can be made for doctors and medicine while using review mining will save a lot of time. In this type of system, the user interface problem in understanding the difficult medical vocabulary such as scientific names. User is confused because a large amount of medical information on different types of symptoms is available.

The idea behind this system is to adapt to cope with the special requirements of the health domain related with users. With the rise in number of patient and disease every year medical system is overloaded and with time has become over priced in many countries. With sufficient data prediction of disease by an algorithm can be very easy and cheap. Prediction of disease by looking at symptoms is an integral part of treatment. We have also designed an interactive interface (GUI) to

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facilitate interaction with the system. We've also tried to show and visualized the result of our study and this design.

LITERATURE SURVEY

Dahiwade et al. built the ML based systems to predict common diseases. The symptoms dataset was imported from the UCI ML depository, where it contained symptoms of many common diseases. The system used Decision Tree as classification technique to achieve multiple diseases prediction. DT algorithm in terms of processing time and accuracy. In light of this study, the findings of Chen et al. also agreed that Decision Tree outperformed typical supervised algorithm decision tree.

Schmidt-Erfurth, HBogunovic, A Sadeghipour -Ophthalmology ,2018– Elsevier Purpose To evaluate the potential of machine learning to predict best-corrected visual acuity(BCVA) outcomes from structural and functional assessments during the initiation phase in patients. Participants Data of 614 evaluable patients receiving intravitreal ranibizumab monthly or prove nata according to protocol-specified criteria in the HARBOR trial.

SJAronson,HLRehm-Nature,2015- to implement. Genetics is formerly being used to direct clinical decision- timber and its donation is likely to increase. To accelerate these advances, fundamental changes are needed in the infrastructure and mechanisms for data collection, storage and sharing. This will create a continuously learning health-care system with seamless cycling between clinical care and research.

PROPOSED SYSTEM

- Using traditional methods (neural networks) and models are not more sufficient to predict the disease.
- It uses various techniques such as neural networks to make prediction of Health UpTo 80% Accuracy rate as per the survey reports .
- It requires more data to predict the disease.

We are applying machine learning to maintained complete hospital data Machine learning technology which allows building models to get quickly analyze data and deliver results faster, with the use of machine learning technology doctors can make a big decision for patient diagnoses and treatment choices, which leads to

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enhancement of patient healthcare services. Healthcare is the most high illustration of how machine learning is used in the medical field.

This system is used to predict disease according to symptoms. This system uses decision tree classifier for assessing the model. This system is used by end-users. The system will prognosticate complaint established on symptoms. This system uses Machine Learning Technology. For predicting diseases, the decision tree classifier algorithm is used. We have named this system as 'Health Examiner Using ML'. This system is for those people who are always fretting about their health, for this reason, we dispense some features which confess them and enhance their mood too. So, there is a feature for the awareness of health, which recognize disease according to symptoms.

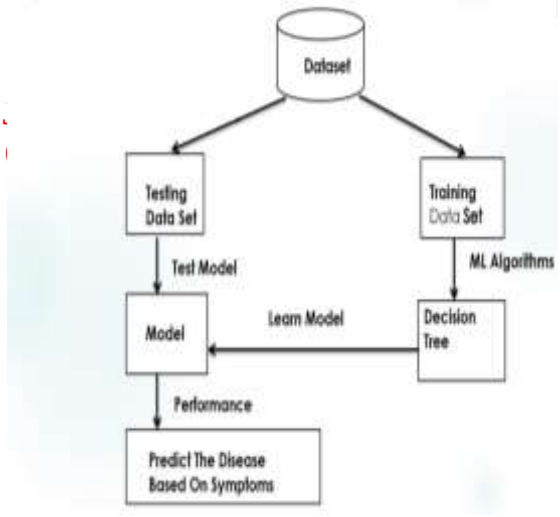
- We came up with the proposed system, where we built tool which it takes the multiple Symptoms and predicts the disease of a person by the symptoms entered.
- In this Proposed system we using Decision Tree Algorithm.
- Decision Tree is a Clustering Tree model and comes under the supervised Learning.

ALGORITHM PROPOSED

Decision Tree:

Decision Tree algorithm is the family of supervised learning algorithms. The decision tree algorithm can be used for solving regression and classification problems, other than supervised learning algorithms,

- The goal is to create a training model used for prediction of the class or value of the target variable by learning simple decision rules inferred from prior data(training data)



- The target variable is the type of Decision Tree. It can be of two types:
- 1. Categorical Variable Decision
- 2. Continuous Variable Decision

SAMPLE RESULTS

CONCLUSION

In this project Such a system can decrease the rush at OPDs(Out Patient Department) of hospitals and reduce the workload on medical staff. On an average we achieved accuracy of ~95%.Such a system can be largely reliable to do the job. Our system also has an easy to use interface. In this article, we used a machine learning algorithm to predict the disease based on the major symptoms.

We also performed exploratory data analysis to find interesting trends from the data set.For the sake of practice, I will suggest that you try to predict the disease that the patient is more likely by suffering, depending upon the symptoms. Machine Learning can be a Supervised or Unsupervised. If you have lesser amount of data and clearly labeled data for training, then you have to go for

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Supervised Learning. Unsupervised Learning would give better performance, accurately outputs and results for large data sets. If you have a huge data set easily available, go for deep learning techniques instead of machine learning. You also have learned about Reinforcement Learning

REFERENCES

1. MirA,DhageSN(2018)Diabetesdiseasepredictionusingmachinelearningonbigdataofhealthcare and domain system. In: 2018 4th international conference on a computing communication control and automation (ICCUBEA).

2. Pingale, Kedar, et al. "Disease Prediction using Machine Learning." (2019).Mr.ChalaBeyene, Prof. Pooja Kamat, "Survey on Prediction and Analysis the Occurrence of Heart Disease Using Data Mining Techniques", International Journal of Pure and Applied Mathematics, 2018.

3. S.PatelandH.Patel,"Surveyofdataminingtechniquesusedinhealthcaredomain," Int.J. of Inform. Sci. and Tech., Vol. 6, pp. 53-60, March, 2016.

4. Thirunavukkarasu K, Singh AS, Irfan M, Chowdhury A (2018) Prediction of liver disease using regression and classification algorithms. In: 2018 4th international conference on computing communication and automation (ICCCA) there will provide an automated predictor for diseases. [5] Ray S (2019) A quick review of different machine learning algorithms.In:2019internationalconferenceonmachinelearning,ann,bigdata,cloudand parallel computing (Com-IT-Con), India, 14th–16th Feb 2019.

5. Schmidt-Erfurth U, Bogunovic H, Sadeghipour A, et al. Machine learning to analyse the prognostic value of current imaging

ISSN: 2278-4632
Vol-13, Issue-05, May 2023

biomarkers in neovascular age-related macular degeneration. Ophthalmology Retina 2018;2:24–30.

6. DavenportTH,Hongsermeier T,McCordKA.UsingAItoimpr oveelectronichealth records. Harvard Business Review 2018.