

Disease Prediction System

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Abstract

Health prediction is a predictive modeling application that predicts disease based on the user's symptoms as input to the system. The system evaluates the symptoms given by the user as input and outputs the resu lt of the disease. It can be given in the form of a virus entered here, and symptoms are given from the text format. The input in the text indicated by the placement of the checkbox with the symptoms. Depending on the input provided by the user, the output will only be produced as text for different objects.

Disease prediction is made using the classification decision tree based on the Random Forest algorithm f or the first type of input. This application is used for community health, biomedical needs, etc. where medi cal information can be verified using large print data so it can be beneficial for users' health.

Keywords Machine Learning, Symptoms-based disease prediction, detector, Decision tree, Image processing, application, technology.

1. Introduction

In the process, we want people to make better health decisions, starting by helping them identify diseases based on given symptoms. Today in modern life many users are looking for apps like ours every month a nd this is increasing rapidly, taking this into account we use a counting process with the following feature s:

This system will provide a list of doctors, but this is not enough to solve some of the drawbacks of the cur rent system, today we are implementing the new health detector and predictor using android application which will not only help you to predict the disease but also list and also ensure that you can manage your profile and keep it updated easily and on the go so patients always have the latest most updates information about you and your clinics. Here's how it works:

There may be many times when you or someone close to you needs a doctor in just a minor case and can't go to the doctor at that time, this health prediction is dependent on user support and is online Android ap p. Here we propose a system that allows users to manage their health problems through smart therapy bas ed on machine learning. This system includes many symptoms and diseases associated with this system. T he system allows users to report their symptoms and problems. It then allows the user to see various diseases ses that may be related to him.

Here we like to use some clever data processing techniques to predict the most likely diseases that will aff ect the patient's symptoms.Doctor module, when the doctor enters the system, he will read the patient info rmation together with the patient report. The doctor will read the patient's details and look for the results t he patient received for the given symptoms. Doctors read your profile. The work done in the management module is to add new diseases by introducing disease categories and symptoms into the database to suppl ement disease and symptom name information for data mining policy work.The control module reads lots of error and symptom information. And even if the patient is not satisfied with the results offered by the s ystem, they can have an online video consultation or self-visit a doctor registered in the system.

2. Related Work

Since the beginning of advanced computer technology, doctors still need this technology in many areas su ch as surgical presentation and radiology tab, but this technology is still behind in understanding. The method still requires the doctor's knowledge and experience due to alternative factors starting from medical recordstoweatherconditions, atmosphere, blood pressure and many other options. To solve this problem, it i s necessary to use medical judgment. The system can help doctors make the right decisions.

Health is a prime example of how machine learning can be used in healthcare, so we use machine learnin g algorithms to manage data collected from users accordingly. Machine learning allows models to analyze data quickly and deliver results faster, using machine learning, doctors can make important decisions abo ut patient conditions, diagnoses and treatment options, thereby improving patients' healthcare. The current system schedules doctor appointments, medication purchases and doctor consultations.

3. Objective

The main objective of this system is to create an Android predictive and diagnostic application that can di agnose and predict minor diseases based on the symptoms provided by the application; android disease pr ediction is designed to help predict disease based on medical data.

- Here presents a new way of identifying diseases from data.
- Avoid contact with people.
- Patient information will be created online and stored for future reference.
- Both the patient and the doctor's time will be saved.
- Online payment for inspection, free contact; this can be a useful defense.

4. Proposed System

This system is used to predict diseases based on symptoms. The system uses machine learning techniques to predict disease.

We call it "Disease Prediction System". This system is for people who are always worried about their heal th, so we added features to get to know them and improve their mood.

That's why it's the job of disease predictor to identify diseases based on their symptoms.

4.1 Dataset and model description

This dataset is an informed association of disease symptoms generated by an automated process based on data from the output summary of patients admitted to the New York-Presbyterian Hospital in 2004. The first column shows the disease,

The first column shows the disease, the second the number of discharge summaries containing a positive and current mention of the disease, and the associated symptom. Associations for the 150 most frequent diseases based on these notes were computed

4.2 Algorithm

The increase rate is based on the decision tree entropy (information increase) method, and the section wit h the lowest value is selected to increase the information. Data gain is the difference between the main co ntent and the requested data. The attributes are named according to their incremental information, and the top attributes are selected as the attributes that can be used in classifications.

In order to distinguish the splitting of the decision tree, the data gain of each feature should be calculated and then the feature with the highest data gain should be selected. The data increment for each feature is c alculated according to the following formula:



$E = \sum$ and the symptoms are shown ranked based on the strength of association. The method used

K i=1 Pi log2 Pi

4.3 Block Diagram:



4.4 Methodology:

How Random Forest Works:

For the sake of storing records, it is important to get the personal details of the patient. The personal details include some factors like E-mail ID, Name, Address, Contact Number, Age, mention allergy if any, etc the other essential details that are supposed to be uploaded.

Random Forests are a collection of decision trees, each tree makes its own predictions, and then the avera ge (regression)/multivote (distributed) values come from the final value. The strength of this model is to c reate different trees with different sub-features of the features.

The features selected for each tree are chosen randomly so that the tree does not go deep and focuses only on the light features. Finally, we create a set of decision trees that, when combined, provide a complete p rediction.

Random Forest Algorithm Creates multiple decision trees and integrates them for accurate and stable pred



iction.

Step-1: Always start by choosing a random sample from a given dataset.

Step-2: Next, this algorithm will construct a decision tree for every sample, then it will get the prediction result from every decision tree.

Step-3: In this step, all other results are checked for accuracy and the results are estimated.

Step-4: Finally, choose the most accurate guess as the final guess.

Get/Set Personal Data: It is important to get the patient's personal data

to store the data.

4.4.2 Get/Set Symptoms:

This is a bit of a challenge. Knowing the symptoms of any disease requires a thorough understanding of t he symptoms, which vary by region, age, gender, and similar factors. For now, it will suffice to capture th e patient's symptoms by asking them to tick a box and record it. Basically the predictions are always base d on what has already happened. That's why we use the history of each disease. These symptoms will then be analyzed appropriately. Prediction will be done by one of the best estimation algorithms with less time and place. Where to keep some specific disease cases to consider when estimating.

5. Conclusion:

This system is useful for users who need to control small cases remotely without calling a doctor. Anyone with an Internet connection and Android device can access health estimates and check-ups anytime, anywhere. do the best for end users.

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