TOPIC: HEALTHCARE - DISEASE PREDICTION OF PATIENT'S USING ML MODEL

BACKGROUND OF THE PROJECT

The healthcare field is one of the leading research fields in today's landscape with rapid advancement in technology and data. It is very difficult to manage huge amounts of patient data. Managing this data is easier through Big Data Analytics. There are procedures to treat many diseases around the world. Machine learning is an emerging approach to disease prediction and diagnosis. This article describes symptom-based disease prediction using machine learning .Machine learning algorithms such as Naïve Bayes algorithm, SVC, GaussianNB, Random forest, K-means are used on the data set provided and disease predictions are made.The implementation is done using the Python programming language.

GOALS OF PROJECT

- The goal of developing a classification system using machine learning algorithms is to make a significant contribution to solving health-related problems by enabling physicians to predict and diagnose illnesses early.
- Minor medical queries can be resolved with the help of this system. Thus, saving time and money for the user as the user will not require to visit the doctor.
- Experiment with various Classification Models & see which yields greatest accuracy

PROBLEM STATEMENT

To develop an AIML-powered platform that can provide immediate quality medical consultation to everyone at any place, make communication between patient and doctor easier. The Disease Prediction system is based on predictive modeling. It predicts the disease of user on the basis of symptoms that the user provides as an input to the system. The system analyzes the symptoms provided by the user as input and gives probability of the disease as an output.We collected two datasets from Kaggle, trained the model using the Training.csv dataset, and tested the model using the Testing.csv dataset. The Training.csv dataset contains 132 parameters that can be used to predict 42 different illnesses.. We are using Machine Learning techniques to build our platform.

SOLUTION / PROPOSED SYSTEM

It might have happened so many times that you or your close ones need doctors help immediately, but they are not available due to some reasons.The Health Prediction System is an online consulting and end-user support project. Here we provide a system that allows users to get instant advice about their health problems through an online smart healthcare system. The system is driven by various symptoms and diseases associated with these systems. This health prediction system allows users to share their symptoms and problems. It then processes the user's symptoms to look for various illnesses that may be related to them. Here we use an intelligent system of Naïve Bayes, SVM, GaussianNB, Random Forest, and a symptom-based Kmeans algorithm that will predict disease. Users can also contact nearby specialists. It will help users for easy medical treatment and diagnosis.

USERS OF PROJECT

- Patients - the patients give the input symptoms based on that will predict the diseases.

- Physicians - it can be used by physicians to predict and diagnose diseases at an early stage.

REQUIREMENTS

- Functional Requirements:

  a. Predict disease with the given symptoms.

  b. Compare the given symptoms with the input datasets .

- Non-functional Requirements

  a.Reliability: The system must be reliable and must give the accurate output for the given output.

  b. Naïve Bayes, SVM, GaussianNB, Random Forest and K-means were used to classify the datasets.