International Journal of Research in Engineering and Science (IJRES)
ISSN (Online): 2320-9364, ISSN (Print): 2320-9356
www.ijres.org Volume 10 Issue 3 ǁ 2022 ǁ PP. 66-68

Catching the Trend: The Smart Health Prediction System

Dr.M.G.R.
Educational and Research Institute
(DEEMED TO BE UNIVERSITY)
(An ISO Certified Institution)
University with Graded Autonomy Status
Maduravoyal , Chennai - 600 095

ABSTRACT

- *Using Machine learning, the system, based on predictive modelling, predicts the disease of patients/users/on the basis of the symptoms that the user provides as an input to the system. At times people might need doctors' help immediately.*
- *But they might not be available due to some reasons or also sometimes people might not be able to find the correct doctor for the treatment.*
- *To Overcome this problem, this project will implement an online intelligent health prediction system web-based application that will facilitate patients to get instant guidance on their health issues.*

Date of Submission: 28-02-2022 Date of acceptance: 09-03-2022

I. INTRODUCTION

AIM(1.1)

Now a days people are suffering with various kinds of diseases and the major problem people are facing. Each individual can't be equally skilled as a specialist. So, we need a Virtual health Predictor to predict the diseases. So, we can create a model with machine learning algorithm and techniques which can give the precise accurate result by taking some inputs from the user.

OBJECTIVE(1.2)

The Healthcare sector involves huge amount of data related to patients, various diagnosis of the diseases. Nowadays the hospitals are adopting the culture of hospital IMS (information management system) in order to handle their patients data systematically and effectively. Large quantity of data is produced by such systems that is represented using charts, numbers, text and images. Talking about the Medical domain, implementation of data mining in this field can yield in discovering and deriving valuable patterns and information which can be beneficial in performing clinical diagnosis.

Naive Bayes algorithm (3.3):

- This system accepts the input from the user and predicts the most probable disease. This is achieved with the help of the dataset and the machine learning algorithm.
- The algorithm here is Naive Bayesian which works on a probabilistic approach. We have imported Scikit to learn the library for its implementation.
- For this, we have used multinomial NB since multiple variants i.e. multiple symptoms are taken.

Formula:

POSTERIOR = PRIOR * LIKELIHOOD/EVIDANCE

i. EVIDANCE: Which is the total number of cases when the event occurs alone which we calculate our algorithm.

ii. Prior * Likelihood: both A and B occurred at together.

Bayesian Theorem(3.4)

- The purpose of the Bayesian theorem is to predict the class label i.e. disease in our project for a given tuple.

- Let X be a tuple containing symptoms and H be some hypothesis, such as that the data tuple X

(symptoms) belongs to a specified class C (disease)

- For classification problems, we are looking for the probability that tuple X belongs to class C, given that we know the attribute description
- **DESIGN**

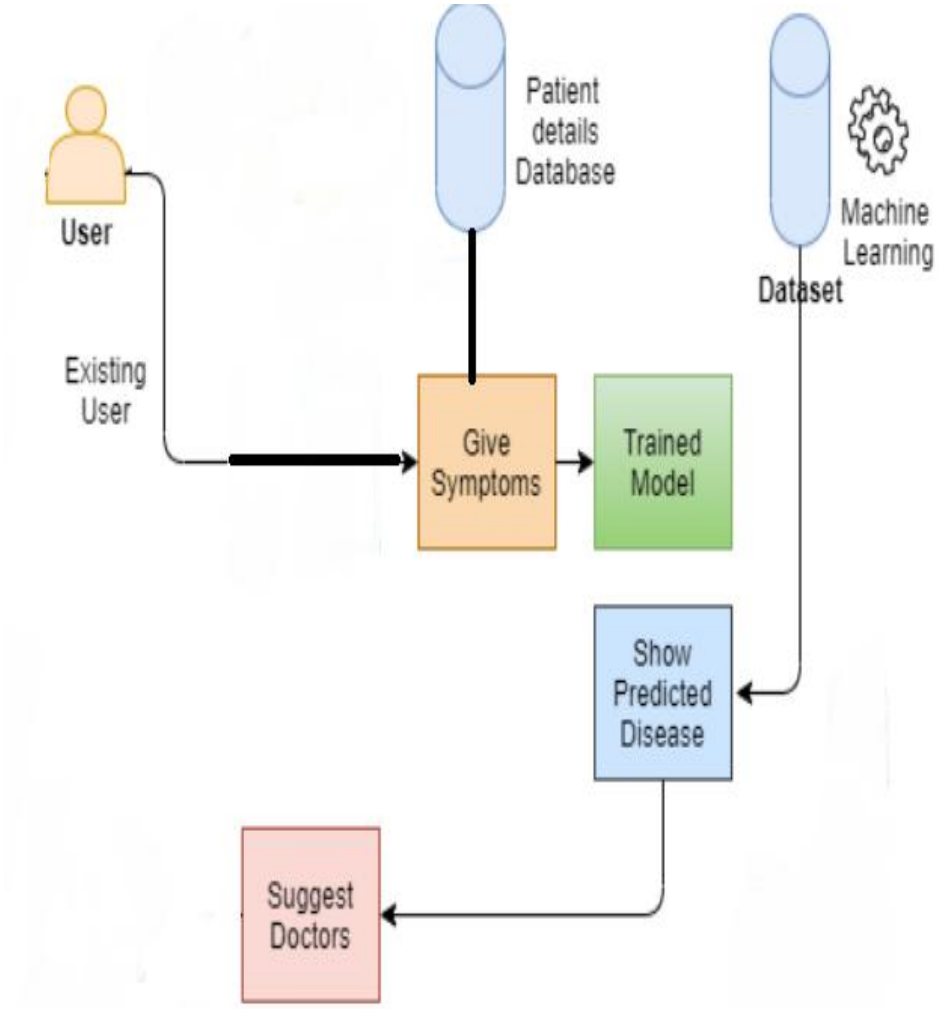
IMPLEMENTATION

Dataset (6.1)

The dataset was taken from a study conducted at Colombia University. It consists of 150 diseases and each disease consist of an average of 8-10 symptoms. 70% of the dataset used for training was made considering all combinational inputs. The symptoms present for the corresponding disease were marked as 1 and remaining as 0.

It consists of 5 drop-down options where we have passed a list of symptoms. The user can select any five symptoms and clicking the predict button the disease predicted will be displayed in the text-box.

ARCHITECTURAL DIAGRAM (5.1)



DISEASE PREDICATION FROM SYMPTOMS(6.4)

Problem Statement: 1.Classical diagnosis method is a process where the patient has to visit a doctor, undergo various medical test and then come to a conclusion. 2.This process is very time consuming.

Our Solution: 1.To save the time required and also money for initial process of diagnosis symptoms, this project proposes an automated disease prediction sysem that relies on user input. 2.The system takes input from user and provides a list of probable diseases.

More about project: 1.Disease will be predicted using Naive Bayesian algorithm which works on probabilistic approach more specifically Multinomial NB since multiple symptoms are taken.

2.According to literature survey, this algorithm results in maximum accuracy for larger dataset. 3.The dataset contains disease as labels and for each disease symptoms are given.

GUI(6.5)

We have used the Tkinter package for the User interface. Tkinter is the standard GUI library for python. Python, when combined with Tkinter, provides a fast and easy way to create a GUI application. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.