Disease Identifier by Symptoms Using Machine Learning

[1]Prof. Bhavesh Shah, [2]Akanksha Shelar, [3]Jai Singh

1Assistant Professor, Department of Computer Engineering, SRTTC FOE, MH, India

2 Student, Department of Computer Engineering, SRTTC FOE, MH, India

3 Student, Department of Computer Engineering, SRTTC FOE, MH, India

(Savitribai Phule Pune University)

Abstract: Health information needs also are changing the knowledge seeking behavior and may be observed round the globe. Challenges faced by many folks are looking online for health information regarding diseases, diagnoses and different treatments. If a recommendation system can be made for doctors and medicine while using review mining will save plenty of some time. In this system like these, the user faces many problems in understanding the core medical vocabulary as the users are laymen. User is confused because an outsized amount of medical information on different mediums are available. The idea behind recommender system is to adapt to affect the special requirements of the health problems of a user.

Index Terms - disease symptoms identifier, Machine learning, naive bayes, k nearest Neighbour, decision tree, Random Forest, Health Care.

I. INTRODUCTION

With the increase in number of patient and disease per annum medical system is overloaded and with time became overpriced in many countries. Most of the disease involves a consultation with doctors to urge treated. With sufficient data prediction of disease by an algorithm are often very easy and cheap. Prediction of disease with the assistance of symptoms is an integral a part of treatment. we've created a model to require the symptoms form the user and use different machine learning techniques to seek out out the respective disease. an accuracy of about 90-95% was achieved while using these algorithms. Such a system can have a really large potential in medical treatment of the longer term. we've also designed an interactive interface to facilitate interaction with the system. we've also attempted to point out and visualized the results of our study and this project.

II. LITERATURE REVIEW

1)Designing Disease Prediction Model Using Machine Learning Approach Artificial Intelligence made computer more intelligent and may enable the pc to think. AI study consider machine learning as subfield in numerous research work. Different analysts feel that without learning, insight cannot be created. In This literature we are using K nearest Neighbour (KNN) and convolutional neural network (CNN) machine learning algorithm for fast classification of massive data and to accurately predict the disease. AS medical data is increasing day by day so usage of that for predicting disease may be a crucial task but it is often made easier with the assistance of data mining because it can easily handle big data.

2)Application of Disease Prediction using machine learning According to the data provided by Centers for Medicare and Medicaid services, 50% of usa citizens have several persistent diseases with a total Usa health care expenditure in 2016 to be about $3.3 trillion, which is equal to $10,348 per person within the US. The early detection of common diseases like carcinoma, diabetes, arteria coronaria and tumor, could control and reduce the prospect of these diseases to be fatal for the patient. With the development in machine learning and artificial intelligence, many cluster and classifications are being used to realize this. Following the methodologies utilized in, this paper presents the use of machine learning algorithms for prediction of diseases including carcinoma, which can be a quite common disease found in women and also heart diseases which are the leading cause of deaths within the US, and diabetes, during which blood glucose or blood glucose levels are too high.

3)Predicting Disease by Using Data Mining Based on Healthcare Information System Healthcare information systems containing huge number of medical records are ideal targets for data processing. Many works have applied processing techniques to pathological data or medical profiles for prediction of specific diseases. In this paper, our specialize in data processing is to extract hidden rules and relationships between diseases from a true world Healthcare data system. Information of pathological indices isn't utilized in our work. Only the knowledge of presence or absence of diseases in patient medical records is applied. the tactic is to predict a disease supported other diseases that a patient already has. One benefit of our approach is that it is often applied to predict any disease instead of a selected disease

4)Disease Prediction by Machine Learning over Big Data from Healthcare Communities According to a report by McKinsey, 50% of Usa citizens have one or more chronic diseases, and 80% of us citizen's medical care fee is mainly spent on chronic disease and their treatment. With the improvement of living standards of the people, it resulted in the increase of incidence of chronic diseases. With the advancements of big data analytics technology, more focus has been paid to disease prediction from the attitude of big data analysis, various surveys conducted by identifying the characteristics automatically from an oversized number of data to reinforce the accuracy of risk classification.

III.PROBLEM STATEMENT

Health information needs also are changing the knowledge seeking behavior and may be observed round the globe. Challenges faced by many folks are looking online for health information regarding diseases, diagnoses and different treatments. If a recommendation system can be made for doctors and medicine while using review mining will save plenty of some time.

In this system like these, the user faces many problems in understanding the core medical vocabulary as the users are laymen. User is confused because an outsized amount of medical information on different mediums are available. The idea behind recommender system is to adapt to affect the special requirements of the health problems of a user.

IV. ARCHITECTURE DIAGRAM
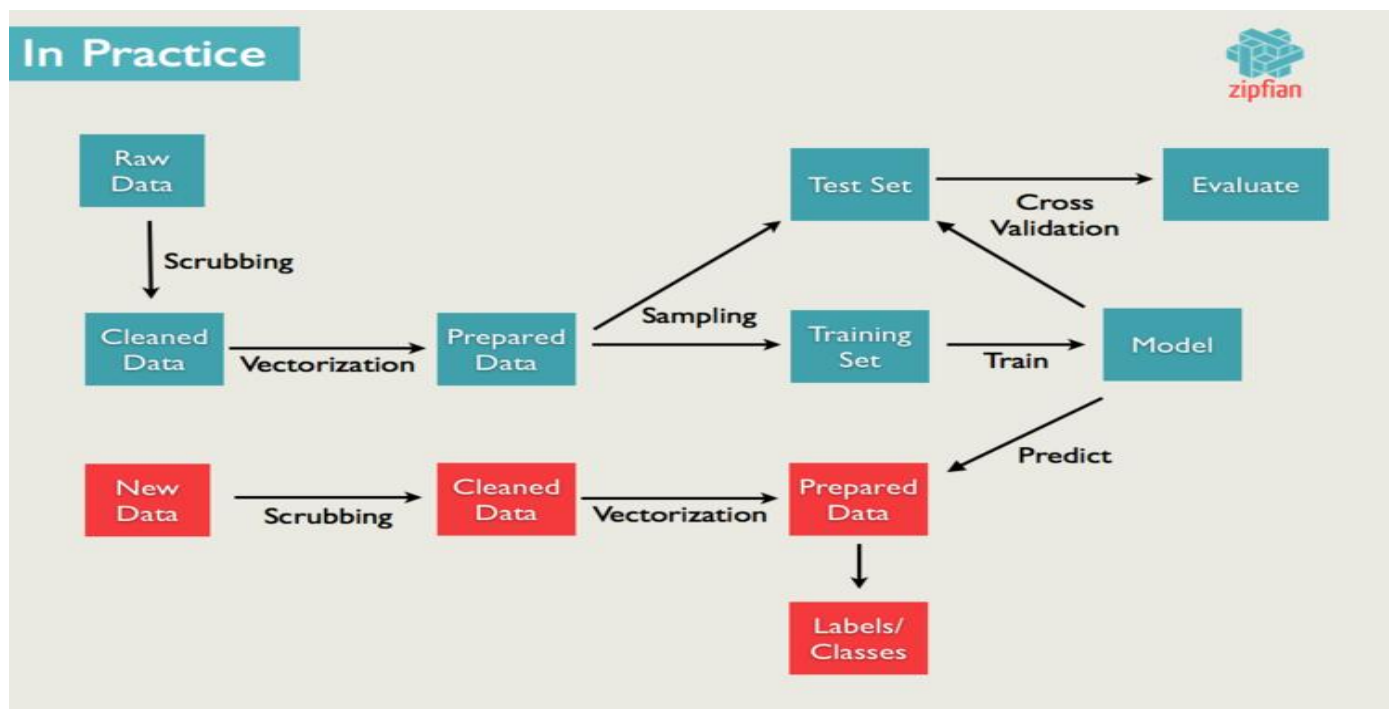
V. PROPOSED SYSTEM

Inside supervised Learning Techniques, classification is more efficient in decision making techniques in many real-world problems. The main objective is to classify data and find an accurate result for symptoms entered and the corresponding disease which might be suspected by the model. we don't also have to take a higher number of samples to increase the accuracy of the model as it might lead to overfitting.so to overcome this drawback we have use a greater number of algorithms. Some algorithms are fast to predict results but the classification accuracy is relatively less. But, the main aim of our model is to get a model with the best accuracy possible and so to achieve that we use the most part of the dataset as training data and a limited amount as a testing data. We have analyzed techniques such as Nearest neighbor, Random Forest, decision tree and Naive Bayes and found out that they are suitable for our model

VI. CONCLUSIONS

We set out to create a system which can predict disease on the basis of symptoms given to it. Such a system can decrease the rush at OPDs of hospitals and reduce the workload on medical staff. We were successful in creating such a system and use 4 different algorithms to do so. On an average we achieved accuracy of ~94%. Such a system can be largely reliable to do the job. Creating this system, we also added a way to store the data entered by the user in the database which can be used in future to help in creating better version of such system. Our system also has an easy-to-use interface. It also has various visual representation of data collected and results Achieved.

VII. ACKNOWLEDMENTS

REFERENCES

[1]Dahiwade, D., Patel, G., & Meshram, E. (2019). Designing Disease Prediction Model Using Machine Learning Approach. 2019 3rd International Conference on Computing Methodologies and Communication.

[2] Kohli, P. S., & Arora, S. (2018). Application of Machine Learning in Disease Prediction. 2018 4th International Conference on Computing Communication and Automation.

[3] Huang, F., Wang, S., & Chan, C.-C. (2012). Predicting disease by using data processing based on healthcare data system. 2012 IEEE International Conference on Granular Computing.

[4] Chen, M., Hao, Y., Hwang, K., Wang, L., & Wang, L. (2017). Disease Prediction by Machine Learning Over Big Data from Healthcare Communities.

[5] Jabbar, M. A., Deekshatulu, B. L., & Chandra, P. (2013). heart condition prediction using lazy associative classification. 2013 International Mutli-Conference on Automation, Computing, Communication, Control and Compressed Sensing