Smart Healthcare Prediction System

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Abstract –

The use of data mining system is for selection of application. In healthcare industry, data mining perform an important role in predicting illness. For detect a illness digit of tests should be requisite from the enduring. But using data taking out method the amount of test can be cheap. This cheap test acting an important role in time and performance. This paper analyzes data mining techniques which can be used for predicting different types of illness. This paper review the explore papers which mostly give attention to on predict heart illness, Diabetes and Breast cancer etc.

It may have happen so a lot of times that you or someone yours need doctors help immediately, but they are not available due to some reason. The Health Prediction system is an end user support and online conference project. Here we propose a system that allows users to get instant guidance on their health issue through an clever health care system online. The system is fed with various symptom and the illness/illness associated with those systems. The system allow user to share their symptoms and issues. It then processes user's symptoms to check for various illnesses that could be associated with it. Here we use some clever data mining techniques to guess the most accurate illness that could be associated with patient's symptoms. In doctor module when doctor login to the coordination doctor can view his patient details and the report of that patient. Doctor can view details about the patient search what patient search for according to their prediction. Doctor can view his personal detail. Admin can add new illness details by specify the type and symptom of the illness into the database. Based on the name of the illness and symptom the data mining algorithm mechanism. Admin can view a variety of illness and symptoms stored in database. This system will provide proper leadership when the user specifies the symptoms of his illness.

I.Introduction

Healthcare in sequence systems containing huge number of medical records are ideal targets for data mining. Many works have applied data mining techniques to pathological data or medical profiles for prediction of specific illness. The work in tried to predict the reoccurrence of illness.

The successful appliance of data mining in highly visible fields like e-business, commerce and trade has led to its application in other industries. The medical atmosphere is still information rich but knowledge weak. There is a wealth of data likely within the medical systems. However, there is a lack of powerful analysis tools to identify hidden relations and trends in data. Heart illness is a term that assigns to a large number of heath care conditions related to heart. These medical conditions describe the astonishing health conditions that directly control the heart and all

its parts categorization is an important problem in data mining. Given a database contain set of records, each with a single class label, a classifier performs a brief and clear definition for each class that can be used to classify successive records. A number of popular classifiers build decision trees to generate class models. The data classification is based on MAFIA algorithms which result in accuracy, the data is estimated using entropy based cross validations and partition techniques and the results are compare.

Data mining is the examination of large datasets to extract concealed and previously strange pattern, relations and information that are difficult to detect with traditional statistical methods. Data mining is rapidly growing winning in a wide range of applications such as analysis of organic compounds, financial forecasting, healthcare and weather forecasting. Data mining in healthcare is an emerging ground of high importance for providing prognosis and a deeper understanding of medical data . Data mining applications in healthcare include analysis of health care centers for better health policy-making and prevention of hospital errors, early detection, prevention of illnesss and preventable hospital deaths, more value for money and cost investments, and detection of fraudulent insurance claims.

Information Mining is a non-unimportant extraction of verifiable, already obscure and potential valuable data about information. To put it plainly, it is a procedure of examining information from alternate point of view and assembling the learning from it. The found information can be utilized for various applications for instance social insurance industry. These days social insurance industry creates substantial measure of information about patients, sickness finding and so on. Information mining gives a set of strategies to find concealed examples from information. A significant test confronting Healthcare industry is nature of benefit. Nature of administration infers diagnosing sickness accurately and gives viable medications to patients. Poor determination can prompt unfortunate outcomes which are unsatisfactory. The analysis of infections is a key and perplexing employment in prescription. The acknowledgment of coronary illness from various highlights or signs is a multi-layered issue that isn't free from false suspicions and is every now and again joined by imprudent impacts.

In this paper, our focus on data mining is to extract hidden rules and relationships between illness from a real world Healthcare Information System. Information of pathological indices is not used in our work. Only the information of presence or absence of illness in patient medical records is applied. In, illness prediction was done by using medical profiles such as cholesterol level, blood sugar, blood pressure and so on. In contrast, our method is to predict a illness based on other illness that a patient already has. One benefit of our approach is that it can be applied to predict any illness rather than a specific illness.

II.Limitations of Existing System

Everyone is enduring at some time or another, and we all want good medical care. We assume that doctors are all medical experts and that there is good research behind all their decisions. However, that cannot always be the case. Nevertheless, they cannot possibly commit to memory all the knowledge they need for every situation, and they probably do not have it readily available.

Even if they did have admission to the massive amounts of data needed to compare treatment outcomes for all the illness they

encounter, they would still need time and know-how to analyze that information and integrate it with the patient's own medical profile. But this kind of in-depth explore and statistical analysis is beyond the scope of a physician's work. They want a physician who will talk to them, listen to what they say and give them advice about how to get better and protect their health in the future. In many cases, the wish for a prescription is less important to the wish of being cared for.

Disadvantage of an existing system would be that the patients have to visit the doctor in person and still does not get proper treatment, as the doctors are unable to predict the exact illness. It is poor when there are huge amounts of data to be classified. In addition, efficiency and accuracy of decisions will decrease when humans are put into stress and immense work. Imagine a doctor who has to examine five patient records; he or she will go through them with ease. However, if the number of records increases with a time constraint, it is almost certain that the accuracy with which the doctor delivers the results will not be as high as the ones obtained when he had only five records to be analyzed.

III. Problem Definition

To design a Health Prediction System for medical data classification and early illness prediction by using SVM and Hill-climbing algorithm. It might have happened so many times that you or someone need doctor’s help immediately, but they are not available due to some reason. People cannot identify his symptoms and take medicines without consulting doctors. Some medicines are very much harmful to health. So user needs online consultation.

IV. Literature Survey

1) The prediction of survival of Coronary heart illness (CHD) has been a challenging research problem for medical society.

2) The goal of this paper is to develop data mining algorithms for predicting survival of CHD patients based on 1000 cases .We carry out a clinical observation and a 6-month follow up to include 1000 CHD cases.

3) The survival information of each case is obtained via follow up. Based on the data, we working three popular data mining algorithms to develop the prediction models using the 502 cases. We also used 10-fold cross-validation method to measure the unbiased approximation of the three prediction models for performance comparison purposes.

4) The results indicated that the SVM is the best predictor with 92.1 % accuracy on the holdout sample artificial neural networks came out to be the second with91.0% accuracy and the decision trees models came out to be the worst of the three with 89.6% accuracy.

5) The comparative study of multiple prophecy models for survival of CHD patients along with a 10-fold cross-validation provided us with an insight into the relative prophecy ability of different data.

6) The data mining comprise analysis of large data from various perspectives and obtaining review of useful information. The information can be transferred into data about future trends and history.

7) The infinite data collected by healthcare production are not mined and hence information is unknown. And as a result the decision making is not effective. The knowledge exposed can be used by the healthcare administrators for attractive the service quality.

8) In this paper, a method for identifying frequency of illness in particular geographical location for a given period of time using Apriority data mining technique based on association rules is proposed.

V.Block Diagram with Description

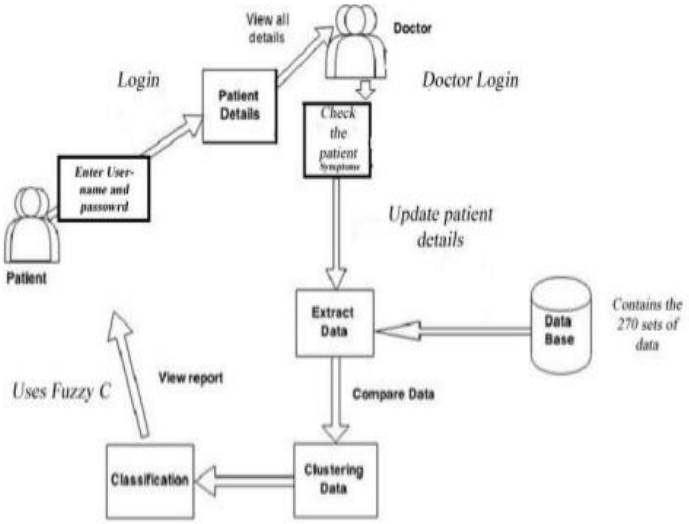

Fig. Block diagram of system

Description:

Doctor will login it his/her Account. when any patient will come to the Doctor will check the symptoms then the Doctor will update the patient details. Doctor will add the whole data of patient. Then the clustering of data will analysis the volume do data. After that the classification of the report will be done. after this process the patient will sign up account by entering the username and password. Then the patient will login and view the details.

VI. Advantages

- User can look for doctor help at any point of time.
- User can chat about their sickness and get instant diagnosis.
- Doctors obtain more clients online.
- This organization can be used by all patients or their family member who need help in emergency
- This cause the illness to be predicted more effectively.
- Moreover, this future system also consists of various suggestions such as doctor details and prescriptions.
- There is a specialist appointed for each illness predicted. The information of each doctor along with their location for each illness will be given.
- Doctor's consultation cost can be avoided at an initial stage prescribed medicines are displayed in detail.

VII. Disadvantages:

- The system is not fully automatic; it needs doctors for full diagnosis.

VIII. Features

Patient module:

- Patient Login: - enduring Login to the system using his ID and Password.
- Patient Registration: -If enduring is a new user he will enter his personal details and he will user Id and password from side to side which he can login to the system.
- My Details: - enduring can view his personal details.
- Illness Prediction: - enduring will specify the symptoms caused due to his illness. System will ask certain question concerning his illness and system predict the illness based on the symptoms specified by the patient and system will also suggest doctors based on the illness.
- Search Doctor:- enduring can search for doctor by specifying name, address or type.
- Feedbackenduring will give feedback this will be reported to the admin.

Doctor module:

- Doctor Login: - Doctor will access the system using his User ID and Password.
- Patient Details: Doctor can view enduring personal details.
- Notification: Doctor will get notice how many people had access the system and what all are the illness predicted by the system.

Admin module:

- Admin Login: Admin can login to the system using his ID and code word.
- Add Doctor: Admin can add new doctor information into the database.
- Add Illness: Admin can add virus details along with symptoms and type.
- View Doctor: Admin can view various Doctors along with their personal information.
- View Illness: Admin can view various illness information stored in database

- View Patient: management can view various patient details who had accessed the system.

View Feedback: Admin can view feedback provided by various users.

IX. Applications

1) Action effectiveness:- Data mining applications can develop to assess the effectiveness of medical treatments. Data mining can transport an analysis of which course of action proves effective by comparing and different causes, symptoms, and courses of treatments.

2) Healthcare management:- Data mining ask for can be urbanized to improved be recognizable with and track chronic bug states and high-risk patients, design suitable intervention, and reduce the number of hospital admissions and claims to aid healthcare management. Data mining used to analyze massive volumes of data and information to search for patterns that may point to an attack by bio-terrorists.

3) Customer relationship management:- Customer

4) Relationship management is a core approach to managing interactions between profitable organizations typically banks and retailers-and their customers, it is no less important in a healthcare context. Customer connections may occur through call centers, physicians' offices, billing departments, inpatient settings, and ambulatory care settings.

5) Fraud and abuse:- Detect fraud and abuses establish norms and then identify odd or abnormal patterns of claims by physicians, clinics, or others attempt in data mining applications. Data mining applications fraud and abuse applications can highlight in suitable prescriptions or referrals and fraudulent insurance and medical claims

6) Medical Device Industry:- Healthcare system's one important point is medical device. For best statement work this one is mostly used. Mobile connections and low-cost of wireless biosensors have covered the way for growth of mobile healthcare applications that supply a convenient, safe and constant way of monitoring of vital signs of patients. Ubiquitous Data Stream Mining (UDM) technique such as light load, one-pass data stream mining algorithms can execute real-time analysis on-board small/mobile devices while considering available resources such as battery charge and available memory

7) Pharmaceutical Industry:- The technology is being used to help the pharmaceutical firms manage their inventory and to develop new product and services. A deep accepting of the knowledge hidden in the Pharmacy data is vital to a firm's competitive position and organizational decision-making.

X.Technical Specifications

Software Requirements:

- Windows 7 and above
- Microsoft SQL Server

Hardware Components:

- Processor – Dual Core
- Hard Disk – 50 GB
- Memory – 1GB RAM

XI.Conclusion

At the end of this proposal we want to remember that this is fully unique system and we believe that it will helpful for us all as well as any hospital business can add this with their existing features. Hope this system will be very demandable in coming future.

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