Diseases Detection Through Smartphone.

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ABSTRACT: In this paper, aspects of the design of an intelligent medical system for diagnosis of Common disease that can be detected by patient data. A number of patient cases are selected as prototype and stored in a separate database which is present in that Smartphone application. The knowledge is acquired from literature review and human experts of the specific domain and is used as a base for analysis, diagnosis and recommendations. In this Research paper is based on artificial intelligence. Artificial Intelligence means learn by knowledge. In this research mechanism for artificial doctor that based on knowledge based. This artificial doctor has the capability to give possibilities of all diseases on the basis of symptoms of patient. This mechanism asks the patient about the symptoms according to their disease. On the basis of those symptoms it will suggest about the possibilities of diseases. This mechanism helps to doctor to identify the disease of the patient.

1.INTRODUCTION

MEDICAL diagnosis always has been an art: we remember famous doctors as well as famous painters or composers throughout the history. Again, who is called an artist? A person who can carry out something those others cannot, and that is exactly what a good physician does during a medical diagnosis procedure. A diagnosis procedure usually starts with the patient complaints and the doctor learn more about the patient situation interactively during an interview, as well as by measuring some metrics such as blood pressure or the body temperature. The diagnosis is then determined by taking the whole available patients status into the account. [1]. In medical diagnosis, DBMSs are used for storing, retrieving and generally manipulating patient data, where as ESs are mainly used for performing diagnoses based on patient data, since they can naturally represent the way experts reason. In this paper, an intelligent medical system for diagnosis of diseases that uses the above methods is presented. The structure of the paper is as follows. In section 2 the medical knowledge involved is outlined. In section 3 the objective of the system is discussed. Section 4 deals with development of the proposed system. Finally, section 5 concludes.

2.REVIEW OF RELATED BACKGROUND LITERATURE

An artificial neural network in typical disease diagnosis has been investigated. The real procedure of medical diagnosis which usually is employed by physicians was analyzed and converted to a machine implementable format. Then after selecting some symptoms of eight different diseases, a data set contains the information of a few hundred cases was configured and applied to a MLP neural network. The results of the experiments and also the advantages of using a fuzzy approach were discussed as well. Outcomes suggest the role of effective symptoms selection and the advantages of data fuzzificaton on a neural networks-based automatic medical diagnosis system.[1]

Hypertension is caused by Blood Pressure. Blood Pressure is the force of blood pushing against blood vessel walls. The heart pumps blood into the arteries (blood vessels), which carry the blood throughout the body. If blood pressure is extremely high, there may be certain symptoms such as Severe headache, Fatigue, disorientation, Vision problems, Chest pain, Difficulty in breathing, irregular heartbeat and Blood in the urine . Hypertension can cause Stroke, Heart failure, Heart attack, Kidney failure and Vision problems. Men have a greater likelihood of developing high BP than women. This varies according to age and among various ethnic groups. In some cases, computer-based assisted diagnoses have been claimed to be even more accurate than those by clinicians. Predicting the outcome of it is one of the most interesting and challenging tasks in which a Neural Network application is developed. Neural Networks are well suited to problems that people use good at solving but for which computers are not. Neural Networks provide a very general way of approaching problems.[2]

Smartphone apps today for a host of entertainment –hurling birds through the air to hit pigs, capturing music we hear floating out of a radio, photographic enhancement, you name it. There is an app for just about everything these days.

At a recent mobile development summit I hosted, I asked a few people how many apps they had on their Smartphone's – the answers varied – from 20 to 100. I refined my question, how many apps do you use regularly? The answer became more homogeneous – three to five a day with the majority being social, entertainment or productivity related, and these were mobile developers.

So, pushing beyond the social and entertainment apps we consume on a daily basis causing us to slide farther towards Aldous Huxley's prediction that we would death. It has created innovative point-of-care Smartphone application that addresses child mortality rates caused by the lack of detection and availability of treatment for malaria.

The current state-of-the-art rapid diagnostic tests (RDTs) deployed throughout sub-Saharan Africa and other parts of the world only have around a 40% rate of accuracy. The Smartphone app has been more than 94% accurate in the tests they have run.

3. RESEARCH CONTRIBUTION

The patterns from the common disease data warehouse are presented in this section. The common disease data sets contains the screening clinical data of disease afire patient. Initially, the data set is pre-processed to make the mining process more efficient. The pre-

processed data set is then clustered using the K-means clustering algorithm with K=2. This result in two clusters, one contains the data that are most relevant to common disease and the other contains the remaining data. The frequent patterns are mined from the data, relevant to common disease, using the ID3 algorithm. this paper proposed for effective diagnosis of wide range at diseases along with their symptoms.

3.1 Data Pre-processing

Cleaning and filtering of the data might be necessarily carried out with respect to the data and data mining algorithms employed so as to avoid the creation of deceptive or inappropriate rules or patterns [3].

3.2Clustering Algorithms

The categorization of objects into various groups or the partitioning of data set into subsets so that the data in each of the subset share a general feature, frequently the proximity with regard to some defined distance measure, is known as Clustering [3].

The clustering problem has been addressed in numerous contexts besides being proven beneficial in many applications. Clustering medical data into small yet meaningful clusters can aid in the discovery of patterns by supporting the extraction of numerous appropriate features from each of the clusters thereby introducing structure into the data and aiding the application of conventional data mining techniques [3].

3.3 ID3 Algorithm

Itemized Dichotomozer 3 algorithm or better known as ID3 algorithm [4] was first introduced by JR. Quinlan in the late 1970's. It is greedy algorithm that selects the next attributes. The information gain associated with the attributes. The information gain is measured by entropy ID3 algorithm. Refers that the generated tree is shorter and the attributes with lower entropies are near the top of the tree.

Algorithm

```
Function ID3 (I, 0, T)
{
/* I is the set of input attributes
/* 0 is the output attributes
/* T is a set of training data
/* function ID3 returns a decision tree
*/ if (T is empty)
{
Return a single node with the value of the most frequent value 0 in T;
/* now handle the case where we can't return a single node compute the information gain for each attribute in I relative to T. Let x be attributes with largest gain (X, T) of the attributes in I;
Let {x, j/j=1, 2... m} be the values of x;
Let {t, j/j =1, 2... m} be the subsets of T;
When T is partitioned. According the value of x; Return a tree with root node labeled x an arcs labeled x_1,x_2,....., X _ m , where the 1 arcs go to the trees.
ID3(I-{X}; 0(T-1), ID3(I-{X},O , T2),..... ID3 {I-{X},O,T-M); }
```

4.OBJECTIVE

The objectives of the proposed expert systems are:-
4.1 To implement the IT in real world problems.
4.2 To assist doctors for various diseases associated with symptoms i.e. to be a home assistant for doctors.
4.3 To assist Medical students working as in pathological labs.
4.4 To help general practice doctors, nurses, nursing students etc and to assist the eye patients as first aid diagnosis
4.5 To provide researchers a huge and up-to-date repository of information regarding various diseases.

5. EXPERIMENTAL RESULT

This section presents the experimental results with the various classifications of the diseases based on the attribute classification. The results focus on the symptoms of the diseases and then, the classification of the diseases. The following figure shows the results of the classification and the association.

In fig. 1 The home page is take place which consist of search your injury, first aid , about. In fig. 2 the basic symptoms of the particular disease is defined. In fig. 3 and 4 ask questions according to disease which user is define . In fig. 5 according to user symptoms disease will detected. In fig. 6 gives the location of hospitals. In fig. 7 provides the first Aid to the user.

Fig 1. Diagnosis Step1

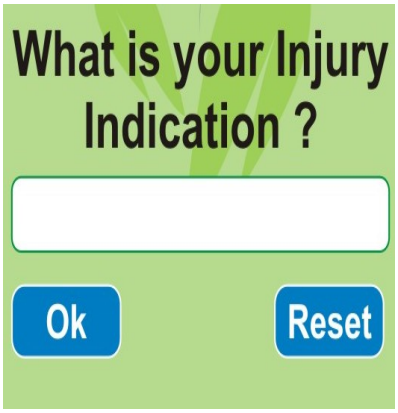

Fig2. Diagnosis Step2

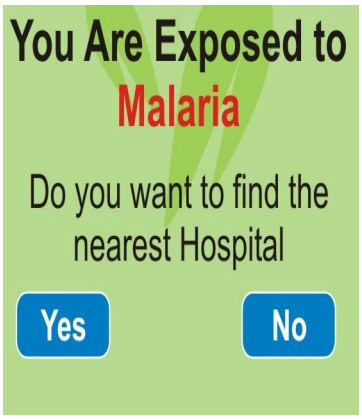

Fig 5.Diagnosis Step5

Fig 3 Diagnosis Step3

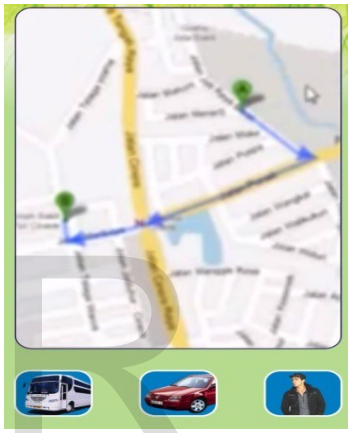

Fig 6. Diagnosis Step6

Fig4. Diagnosis Step4

Fig 7. Diagnosis Step7

The results show that by using the ID3 algorithm the classification of the attributes becomes easier hancevarification also becomes easier. Therefore this rule can be applied for mining and prediction.

CONCLUSION

In this paper we proposed the procedure for retrieval of dataset with, relevant fields using ID3 algorithm.

Unlike previous works it is based on the individual diagnosis for specific symptoms of the disease. This paper concluded with the individual retrieval of dataset that predicts the diagnosis on the whole. This paper also concluded that the mechanism can be used by any parson those who have Smart phone and by this application the disease can be easily detected according to the symptoms.

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