

“DIABETES PREDICTION USING MACHINE LEARNING”

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Abstract- Diabetes is a most common disease caused by a group of metabolic disorders. It is also known as Diabetic mellitus. It affects the organs of the human body. It can be controlled by predicting this disease earlier. If diabetics patient is untreated for a long time, it may lead to increase blood sugar. Now a days, Healthcare industries generating large volume of data. Machine Learning algorithms and statistics are used to predict the disease with the help of current and past data. Machine learning techniques helps the doctors to predict early stage for diabetics. Diabetics patient medical record and different types of algorithms are added in dataset for experimental analysis. we use logistic regression, random forest, decision tree classifier and gradient boosting to predict whether a patient has diabetes based on diagnostic measurements. Performance and accuracy of the applied algorithms is discussed and compared

Key Words: CNN, FCM, Medical Image, segmentation, SVM.



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INTRODUCTION

Diabetes is a situation which causes deficiency due to less amount of insulin in the blood. Warning sign of high blood sugar results in frequent urination, feeling thirsty, increased hunger. Severe difficulties lead to cardiovascular disease foot sores, and eye blurriness. When there is a rise within the sugar level within the blood, it is referred to as prior diabetes.

LITURATURE SURVEY

1.Diabetic Patient Prediction using Machine Learning Algorithm, Malini M etal.,[1] This paper studied that, Diabetes is a most common disease caused by a group of metabolic disorders. It is also known as Diabetic mellitus. It affects the organs of the human body. It can be controlled by predicting this disease earlier. If diabetics patient is untreated for a long time, it may lead to increase blood sugar. Now a days, Healthcare industries generating large volume of data. Machine Learning algorithms and statistics are used to predict the disease with the help of current and past data. Machine learning techniques helps the doctors to predict early stage for diabetics. Diabetics patient medical record and different types of algorithms are added in dataset for experimental analysis. we use logistic regression, random forest, decision tree classifier and gradient boosting to predict whether a patient has diabetes based on diagnostic measurements. Performance and accuracy of the applied algorithms is discussed and compared.

2.Diabetic Retinopathy Detection Using Prognosis of Microaneurysm and Early Diagnosis System for Non-Proliferative Diabetic Retinopathy Based on Deep Learning Algorithms, Lifeng Qiao etal.,[2] This paper presents the Prognosis of Microaneurysm and early diagnostics system for non-proliferative diabetic retinopathy (PMNPDR) capable of effectively creating DCNNs for the semantic segmentation of fundus images which can improve NPDR detection efficiency and accuracy. An easy yet efficient integrated lesion identification system, coupled with LOG and MF filters accompanied by post-processing procedures, is

suggested. Combined sequentially and smartly, these techniques provide a very effective system for the identification of various lesions regardless of their texture, form, scale, etc. Transforming Curvelets is a very good candidate for better dark lesions. The BPF is optimally designed for the improvement of bright lesions. Through MSSIM maximization, the BPF's gain and cutting frequencies are automatically achieved. Data for non-MAs vary widely, the collection of non-microaneurysm training is quite a topic. The huge training set not only takes time and causes class imbalance. In this paper, a sparse Principal Component Analysis based unregulated classification approach for detecting microaneurysm was developed. Once a model that represents MA has been developed, any deviating from the standard MA is detected by statistical monitoring, a scarce Principal Component Analysis is employed to find the latent structure of microaneurysm data.

3. Disease Influence Measure Based Diabetic Prediction with Medical Data Set Using Data Mining, B.V. Baijuetal.,[3]

This paper shows that, The problem of diabetic prediction has been well studied in this paper. The disease predictions have been explored using various methods of data mining. The use of medical data set on the prediction of diabetic mellitus has been analyzed. This paper performs a detailed survey on disease prediction using data mining approaches based on diabetic data set. The presence of disease has been identified using the appearance of various symptoms. However, the methods use different features and produces varying accuracy. The result of prediction differs with the methods/measures/ features being used. Towards diabetic prediction, a Disease Influence Measure (DIM) based diabetic prediction has been presented. The method preprocesses the input data set and removes the noisy records. In the second stage, the method estimates disease influence measure (DIM) based on the features of input data point. Based on the DIM value, the method performs diabetic prediction. Different approaches of disease prediction have been considered and their performance in disease prediction has been compared. The analysis result has been presented in detail towards the development.

PROBLEM DEFINATION:

The diabetes is one of lethal diseases in the world. It is additional a inventor of various varieties of disorders foe example: coronary failure, blindness, urinary organ diseases etc. In such case the patient is required to visit a diagnostic center, to get their reports after consultation. Due to every time they have to invest their time and currency

AIM & OBJECTIVES

- We are making the system to predict the diabetics at early stage.
 - Avoid the Time-consuming task of feature extraction.
 - Effective way with 80-85 % accuracy.
- To provide a cost-effective solution in market

MOTIVATION

Diabetes is emerging as a predominant disease in the developing countries like India. The disease is becoming very serious and cause many other problems in the human body. Many factors are remaining as a cause for this disease in human body. The disease is not curable and can only be controlled

SYSTEM ARCHITECTURE

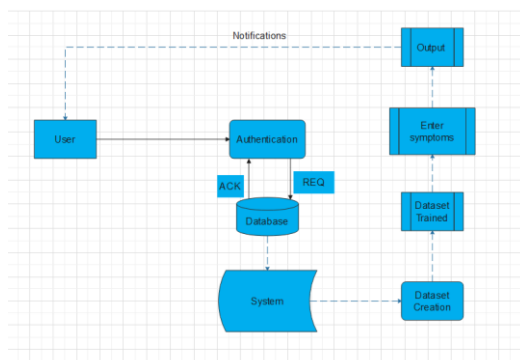
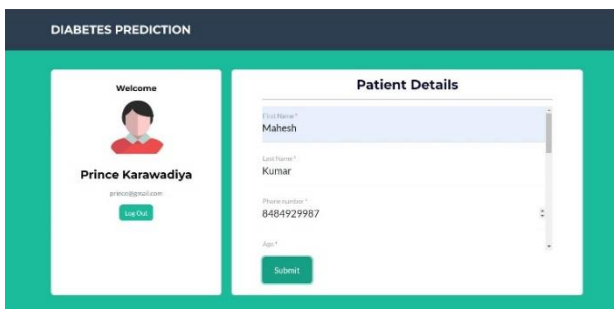
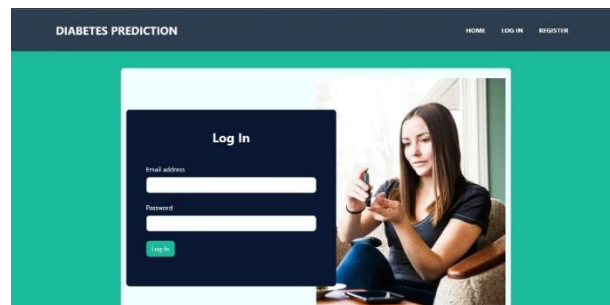
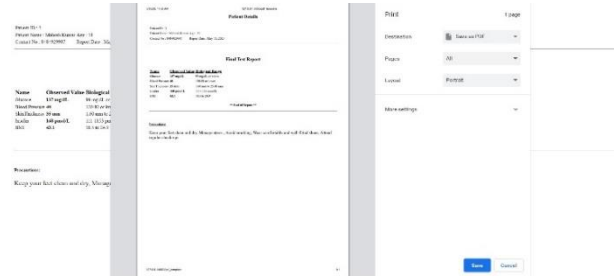


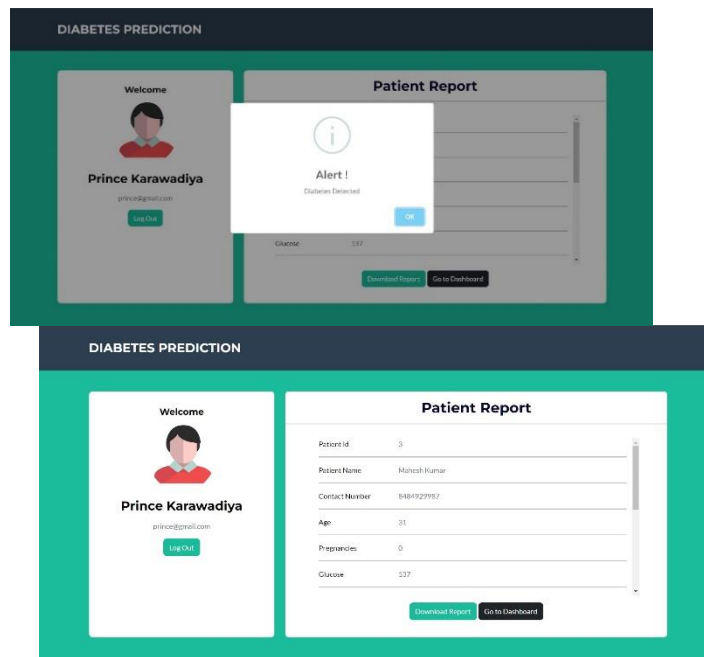
Fig -1: System Architecture Diagram

APPLICATIONS

- Hospital: - In emergency clinics this can be utilized, as we realize that the conventional strategy for diabetes exception is very tedious. At the point when we go over any side effect, we want to test for it.
- Health care center: - Going to specialist just to show the report can be a brief period consuming for the patient. Assuming we utilize this framework for the individual use them we can check whether we have diabetes or not. This can be utilized at home additionally by simply entering the information from out reports.

RESULT





CONCLUSION

Hence, we are overcoming the drawback of existing system, and providing a smart system that will not only monitor and control our data with security but also supply it too whenever necessary. We are trying achieved more than 85% detection accuracy.

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