MACHINE LEARNING MODEL TO PREDICT CHRONIC KIDNEY DISEASE

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INTRODUCTION

OVERVIEW:

This document is focused on Machine Learning Model to identify patients with Chronic Kidney Disease(CKD).  Our aim is to predict patients with chronic kidney failure (ckd) disease and patients who do not (notckd) suffer from the disease. So for that we are building a Machine Learning model to predict the compressive strength of concrete using IBM Watson AutoAI Machine Learning Service. The model is deployed on IBM cloud to get scoring end point which can be used as API in mobile app or web app building. We are developing a web application which is built using node red service. We make use of the scoring end point to give user input values to the deployed model. The model prediction is then showcased on User Interface.

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PURPOSE:

The purpose of the project is to build a Machine Learning Model to differenciate patients having chronic kidney failure and not having chronic kidney failure.Data used consists of 25 medical tests of a patient with which model is built to confirm whether patient is having chronic kidney failure or not.Model is built using IBM Watson AutoAI Machine Learning Service. The model is deployed on IBM cloud to get scoring end point which can be used as API in mobile app or web app building. We are developing a web application which is built using node red service.

LITERATURE SURVEY

EXISTING PROBLEM:

Chronic Kidney Disease (CKD) is a major medical problem and can be cured if treated it in the early stages. Usually, people are not aware that medical tests, we take for different purposes could contain valuable information concerning kidney diseases

PROPOSED SOLUTION:

Consequently, attributes of various medical tests are investigated to distinguish which attributes may contain helpful information about the disease. The information says that it helps us to measure the severity  
of the problem, the predicted survival of the patient after the illness, the pattern of the disease and work for curing the disease.

THEORITICAL ANALYSIS

BLOCK DIAGRAM:

Deployment

Train and Test the Algorithm

Analysing Data

Data Wrangling

Collection of Data

EXPERIMENTAL INVESTIGATIONS

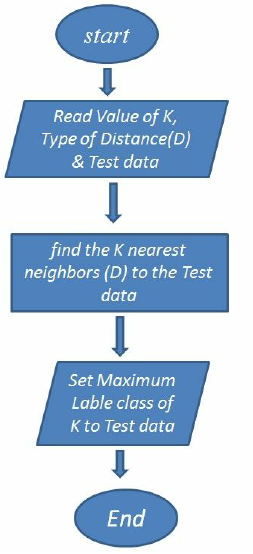
This model takes information of various medical test predictions of patient and identify whether patient have chronic kidney disease or not.

Model takes information of 24 test reports such as age,bp,sg,al,su,rbc,pc,pcc,ba,bgr,bu,sc,sod,pot,hemo,pcv,wc,rc,htn,dm,cad,appet,pe,ane and predict the result of patient as ckd or not ckd.

The information says that it helps us to measure the severity  
of the problem, the predicted survival of the patient after the illness, the pattern of the disease and work for curing the disease.

FLOWCHART

Flowchart for K NEAREST NEIGHBORS Algorithm which is used to create chronic kidney disease model.



RESULT

Model is built using IBM Watson Auto AI Machine Learning Service. The model is deployed on IBM cloud to get scoring end point which can be used as API in mobile app or web app building. A web application is built using Node Red Service. Used the scoring end point to give user input values to the deployed model. Finally, the result is obtained as ckd or notckd which gives information whether the patient is suffering from chronic kidney failure or not.So, that further measures can be taken.

ADVANTAGES AND DISADVANTAGES

ADVANTAGES:

* This model help us in giving the information of patient whether he is having Chronic Kidney Disease or not which is the main objective of this project.
* Very easy and intuitive.
* Can be applied to the data from any distribution
* Robust in terms of not requiring the categories to be linearly separated.
* Effective

DISADVANTAGES:

* Using K value may be tricky.
* Test stage is computationally expensive.

APPLICATIONS

* Disease prediction.
* Disease identification and diagnosis.

CONCLUSION

I would like to conclude that, it is immense learning experience while preparing the project. Model is built using IBM Watson Auto AI Machine Learning Service. The model is deployed on IBM cloud to get scoring end point which can be used as API in mobile app or web app building. A web application is built using Node Red Service. Used the scoring end point to give user input values to the deployed model. The of this model is to find whether the patient is affected by chronic kidney disease or not by taking the information of various tests. . Finally, the result is obtained as ckd or notckd which gives information whether the patient is suffering from chronic kidney failure or not. So, that further measures can be taken.

FUTURE SCOPE

This application can be easily implemented under various situations. We can add new features as and when we require. Reusability is possible as and when require in this application. There is flexibility in all the modules.

BIBILOGRAPHY

The content for this project report is taken from the following sources:

* <https://smartbridge.teachable.com/>
* cloud.ibm.com
* <https://www.kaggle.com/mansoordaku/ckdisease>
* <https://www.youtube.com/watch?v=apFbFikesjA&feature=youtu.be>
* <https://www.youtube.com/watch?v=yIO4ttkor7Q&feature=youtu.be>
* <https://cloud.ibm.com/catalog?search=object#services>

APPENDIX

Model is built using IBM Watson AutoAI Machine Learning Service. The model is deployed on IBM cloud to get scoring end point which can be used as API in mobile app or web app building. We are developing a web application which is built using node red service.

K Nearest Neighbors algorithm is used

