

EARLY DETECTION OF CHRONIC KIDNEY DISEASE USING MACHINE LEARNING

PROJECT DOCUMENTATION

Introduction:

Every year many people are diagnosed with Chronic Kidney Disease. Mostly people are diagnosed with later stages rather than the early stages, the major reason for this is people are not aware about the symptoms and they do not have a proper diagnosis in a very earlier stage. The result of early diagnosis is that they can be treated easily with effective therapy and medication, the later stages are tough to be treated and require high medication. The final stage is the renal failure, which leads to high damage to the life of the patient and risks high.

So, we have created a web application along with dataset so as to predict the chronic kidney disease in an earlier stage by the users without any medical help with higher accuracy and prediction.

Literature Survey:

S.NO	TITLE	DESCRIPTION	ALGORITHM AND TECHNIQUES USED
01.	A Machine Learning Methodology for Diagnosing Chronic Kidney Disease	A machine learning approach for diagnosing CKD was proposed in this study. A model that combines logistic regression and random forest with the aid of perceptron was utilized and it was able to attain an average accuracy of after ten times of simulation.	Feed Forward Neural Network, knearest neighbour, Naive Bayes classifier, Random Forest, Support vector machine, Logistic regression.

02.	Chronic Kidney Disease Prediction using Machine Learning	This study proposes the techniques for CKD such as Ant Colony Optimization (ACO) technique and Support Vector Machine (SVM) classifier, predicts whether the person is having CKD or not by using minimum number of features.	Support Vector Machine (SVM) classifier , Ant Colony Optimization technique
03.	Performance Analysis of Machine Learning Classifier for Predicting Chronic Kidney Disease	This proposed system detects chronic kidney disease using machine learning; They have attained an accuracy of 100% in decision tree classifier, 95.12% in random forest and 98.82% in logistic regression.	Random Forest classifier, Logistic Regression and Classification, Decision tree classifier
04.	Statistical and Data Mining Aspects on Kidney Stones: A Systematic Review and Meta-analysis	They predicted good accuracy with Classification tree and Random Forest followed by Support Vector Machines . Logistic and NN has also shown good accuracy results .	Random Forest, Support vector machine, Logistic and NN

05.	A Neural Network based Model for Predicting Chronic Kidney Diseases	The 14 different properties are analysed and linked to chronic kidney disorder victims and foretold accuracy for a machine learning algorithm named Artificial Neural Network. After analysing the outcomes, it is recognized that the algorithm gives correctness of 96	Artificial Neural Network
06.	Prediction of chronic kidney disease (CKD) using Data Science	This proposed research work is primarily focused on finding the best classification algorithm which can be used for the diagnosis of CKD based on the classification report.	Support Vector Machine, Random Forest, XGBoost, Logistic Regression, Neural networks
07.	Chronic Kidney Disease Prediction Using Data Mining	They have diagnosed kidney-related diseases using various data mining techniques, and in that, our overall objective is not to find the ideal solution but to indulge the solid diagnosis.	Back Propagation Neural Network, Random Forest Algorithm

08.	Predict chronic kidney disease using data mining algorithms in hadoop	This paper presents the prediction of chronic kidney disease using data mining classifiers. To elicitate the hidden information about chronic disease from a given dataset, data mining technology is used to make decisions.	KNN (K-Nearest Neighbor) and SVM (Support Vector Machine).
09.	Classification with Ant Colony Optimisation	The primary objective of this research is to propose and investigate a novel ant colony optimization-based classification rule discovery algorithm and its variants.	Ant Colony Optimization

Information Gathering:

Existing Problem:

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

Proposed Solution:

In this proposed system we are able to identify the patients with disease. Once any person gets kidney disease, they may suffer from the disease which may decrease their working capability as well as living quality. Our aim is to predict patients with chronic kidney failure (ckd) disease and patients who do not (not-ckd) 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 a scoring end point which can be used as web app building. 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.