LITERATURE SURVEY

ON

EARLY DETECTION OF CHRONIC KIDNEY DISEASE USING MACHINE LEARNING

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ABSTRACT

Chronic Kidney Disease is a global health problem of decrease in kidney functioning ability with high morbidity and mortality rate, and it induces other diseases. Machine learning models can effectively aid clinicians achieve this goal due to their fast and accurate recognition performance. In this study, we propose a machine learning methodology for diagnosing Chronic Kidney Disease. The Chronic Kidney Disease data set was obtained from the University of California Irvine (UCI) machine learning repository, which has a large number of missing values which is filled using KNN imputation which selects several complete samples with the most similar measurements to process the missing data. We proposed an integrated model that combines logistic regression and random forest by using perceptron, which could achieve an average accuracy of 99.83% after ten times of simulation. The system displays the results of predicting whether patients with renal disease have entered a phase of chronic kidney disease or not. The methodology of this study consists of two main phases: classification modeling and system development. Chronic Kidney Disease prediction in a cost-efficient way which will be helpful for underdeveloped and developing countries.

Book/journal	Author's name	Year	Inference
Early Prediction of Chronic Kidney Disease by using Machine Learning Techniques	Deepika Bidri	2020	Chronic Kidney Disease is analyzed using Data mining. The objective of the paper is to predict Chronic Kidney Disease (CKD) using Data mining techniques like Naive Bayes and Artificial Neural Network network. kidney Disease is a serious lifelong condition that is induced by either kidney pathology or reduced kidney functions. Early prediction and proper treatments stop or slow the progression of this chronic disease to the end stage, where dialysis or kidney transplantation is the only way to save a patient's life. In this study, we examine the ability of several machine-learning methods for the early prediction of Chronic Kidney Disease.
Data mining techniques are applied to predict Kidney Disease.	Krishna Apparao Rayavarapu	2015	Described in their research to understand machine learning techniques to predict kidney stones. They predicted good accuracy with C4.5, Classification tree, and Random forest (93%). It showed good accuracy results with zero relative absolute error and 100% classified results. Machine learning approaches provide better results in

			the treatment of kidney stones.
Artificial Neural Networks are used for Kidney dialysis survivability	K.R.Lakshmi	2019	The data mining techniques were evaluated based on the accuracy measures such as classification accuracy, sensitivity, and specificity. They achieved results using 10-fold cross-validations and a confusion matrix for each technique. They found ANN shows better results. Hence ANN shows the concrete results with Kidney dialysis of patient records
Detection of Chronic Kidney Disease using Machine Learning Algorithms with Least Number of Predictors	Marwa Almasoud	2013	Proposed development of CKD prediction system using machine learning techniques such as K-Nearest Neighbor, Logistic Regression, Decision Tree, Random Forest, Naïve Bayes, Support Vector Machine, and Multi-Layer Perceptron Algorithm. These are applied and their performance is compared to the accuracy, precision, and recall results. Finally, Random forest is chosen to implement this system.

Chronic Kidney Disease Prediction using Machine Learning	S.Belina	2018	According to the research,the proposed system that uses an extreme learning machine and ACO for CKD prediction.Classification i done using the MATLAB tool and ELM.This technique is an improvement under the Sigmoid additive type of SLFNs which uses Decision tree SVM techniques. By comparing the two techniques,it is concluded that SVM give the best result.SVM prediction is less time-consuming which helps doctors to analyze the patients within a less period.