EARLY DETECTION OF CHRONIC KIDNEY DISEASE USING MACHINE LEARNING

LITERATURE SURVEY

TITLE	AUTHOR	YEAR	DESCRIPTION
Detection of Chronic Kidney Disease Using Machine Learning Algorithms with Least Number of Predictors	Marwa Almasoud 1, Princess Nourah bint, Tomas E Ward2	2013	Chronic kidney disease (CKD) is one of the most critical health problems due to its increasing prevalence. In this paper, we aim to test the ability of machine learning algorithms for the prediction of chronic kidney disease using the smallest subset of features. Several statistical tests have been done to remove redundant features such as the ANOVA test, the Pearson's correlation, and the Cramer's V test. Logistic regression, support vector machines, random forest, and gradient boosting algorithms have been trained and tested using 10-fold cross-validation. We achieve an accuracy of 99.1 according to F1-measure from Gradient Boosting classifier. Also, we found that hemoglobin has higher importance for both random forest and Gradient boosting in detecting CKD.
The Diagnosis and Estimate of Chronic Kidney Disease Using the Machine Learning Methods	Muhammet Atalay Adil Kondiloglu	2016	This study investigated to determine the factors that decisive for early detection of chronic kidney disease, launching early patient treatment

			processes, prevent complications resulting from the disease and predict of disease. The study aimed diagnosis and prediction of disease using the data set that composed of data of 250 patients with chronic kidney disease and 150 healthy people. First, the chronic kidney disease data was classified with machine learning algorithms and then training and test results were analyzed. The estimation results of chronic kidney disease were compared with similar data and studies.
Early Prediction of Chronic Kidney Disease Using Machine Learning Supported by Predictive Analytics	J. Aljaaf et al, IEEE Congress on Evolutionary Computation (CEC)	2018	Examined the ability of several machine-learning methods for early prediction of chronic kidney disease. This study starts with 24 parameters in addition to the class attribute and ends up by 30% of them as ideal subset to predict chronic kidney disease. A total of 4 machine learning based classifiers have been evaluated within a supervised learning setting. The experimental procedure concludes that advances in machine learning, with assist of predictive analytics, represent a promising setting by which to recognize intelligent solutions.
Comparison and development of machine learning tools in the prediction of chronic kidney disease progression	J. Xiao et al, Journal of Translational Medicine, vol. 17, (1), pp	2019	Urinary protein quantification is critical for assessing the severity of chronic kidney disease (CKD). However, the current procedure for determining the severity of

			CKD is completed through evaluating 24-h urinary protein, which is inconvenient during follow-up. To quickly predict the severity of CKD using more easily available demographic and blood biochemical features during follow-up, they developed and compared several predictive models using statistical, machine learning and neural network approaches.
Optimization of Prediction Method of Chronic Kidney Disease Using Machine Learning Algorithm	Pronab Ghosh, F M Javed Mehedi Shamrat	2020	The overall study has been implemented based on four reliable approaches, such as Support Vector Machine (henceforth SVM), AdaBoost (henceforth AB), Linear Discriminant Analysis (henceforth LDA), and Gradient Boosting (henceforth GB) to get highly accurate results of prediction. These algorithms are implemented on an online dataset of UCI machine learning repository. Later, different performance evaluation metrics have also been displayed to show appropriate outcomes. To end with, the most efficient and optimized algorithms for the proposed job can be selected depending on these benchmarks.