ABSTRACT

IMPLEMENTATION OF THE ADABOOST-BASED K-NEAREST NEIGHBOR ALGORITHM FOR THE CLASSIFICATION OF CHRONIC KIDNEY DISEASE

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Chronic kidney disease is a progressive decline in kidney function over months or years. Chronic kidney disease is becoming a global public health problem with an increasing prevalence and incidence, a poor prognosis, and a high cost. Therefore, a data mining classification system is needed to help medical experts deal with chronic kidney disease. The purpose of this study was to determine the application of the AdaBoost-based K-Nearest Neighbor algorithm and the accuracy, recall, and precision performance results of the AdaBoost-based K-Nearest Neighbor method for the classification of chronic kidney disease. The data used was Chronic Kidney Disease from the UCI Repository of Machine Learning Databases, in July 2015, and I implemented the AdaBoost-based K-Nearest Neighbor algorithm using the Rapidminer tool. The AdaBoost algorithm is weighted in order to obtain accurate accuracy, recall, and precision values. The results of this study showed that the classification using the AdaBoost-based K-Nearest Neighbor algorithm with k = 3 as a parameter reached an accurate value, obtaining an accuracy value of 86.67%, a recall of 86.22%, and a precision of 85.63%.

Keywords: Classification, Chronic Kidney Disease, K-Nearest Neighbor, AdaBoost, Rapidminer.