An Application to Predict the Risk Level of Chronic Kidney Disease

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Data mining has been an emerging field of research which is a powerful technology with great potential to help in decision making and predictive analytics. The ability to extract hidden predictive information from data has become the major advantage of data mining. There are various data mining techniques such as classification, clustering, regression analysis, time series analysis and etc. In the health care industry, the data mining is mainly used for predicting the diseases from the available data on the diagnosis. Chronic Kidney Disease (CKD) is a gradual decrease in renal function over a period of several months or years. The primary objective of this research was to determine the CKD risk level in CKD patients. A risk evaluation system is developed in order to predict the probability of any individual bearing the disease using Two Class Logistic Regression and Support Vector Machine. The application automates a prospective analysis of the progressive kidney disease and offers a prediction for each individual indicating their own level of risk of bearing CKD with an accuracy of 96%. Since the mechanism predicts the risk for each individual bearing CKD, the users get the opportunity to obtain early medical attention. This certainly paves the way to raise kidney disease awareness around the country, guiding people to be more responsible towards eliminating CKD.

Keywords: Machine learning, chronic kidney disease, disease prediction, support vector machine, two class logistic regression