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(57) Abstract :
Chronic Kidney Disease is one of the most critical illnesses nowadays and proper diagnosis is required as soon as possible. Machine learning techniques have become reliable for medical treatment. Seven classifier algorithms have been applied in this research such as artificial neural network, C5.0, Chi-square Automatic interaction detector, logistic regression, linear support vector machine with penalty L1 & with penalty L2 and random tree. For each classifier, the results have been computed based on (i) full features, (ii) correlation-based feature selection, (iii) Wrapper method feature selection, (iv) Least absolute shrinkage and selection operator regression, (v) synthetic minority over-sampling technique with least absolute shrinkage and selection operator regression selected features, (vi) synthetic minority oversampling technique with full features. From the results, it is marked that LSVM with penalty L2 is giving the highest accuracy of 98.86% in synthetic minority over-sampling technique with full features. Along with accuracy, precision, recall, F-measure, area under the curve and GINI coefficient have been computed and compared results of various algorithms have been shown in the graph. In the synthetic minority over-sampling technique with least absolute shrinkage and selection operator selected features, again linear support vector machines gave the highest accuracy of 98.46%. Along with machine learning models one deep neural network has been applied on the same dataset and it has been noted that deep neural networks achieved the highest accuracy of 99.6%.

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