

ABSTRACT

In telecommunications, '5G' is the fifth-generation technology used for cellular broadband network. The cellular broadband network is a mobile network in which mobile to tower communication is wireless. It can provide lower latency rate less than 1ms, higher downloading speed up to 20 Gbit/s, connect more devices simultaneously, good efficiency in terms of spectrum, and low power consumption. It can be used in three different types of application i.e., Enhanced-Mobile-Broadband (eMBB), Massive-Machine-type Connectivity (mMTC), and Ultra-Reliable and Low-Latency Connectivity (URLLC). In this work, investigation of various machine learning algorithm for the prediction of public adoption of 5G network has been performed. For this purpose, a questionnaire form has been designed that contains the individual information i.e., network type, network name, mobile company name etc. After the collection of datasets four different machine learning algorithms i.e., Decision Tree, Random Forest, K Nearest Neighbor, and Adaboost classifier have been applied on the dataset. The model performance has been evaluated in terms of accuracy, precision, recall, and f1-score. It has been observed that DT and RF achieved maximum accuracy of 95%, while adaboost achieved 92%, and KNN achieved 68%. Confusion matrix is also used to evaluate model performance which give the same results as model achieved through classification report. ROC curve also depicts that DT is a best suitable algorithm for the prediction of public adoption of 5G network.