Optimizing Key Features for Accurate 5G Coverage Prediction

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Abstract: *This system focuses on predicting wireless network generations (2G, 3G, 4G, 5G) in India using a machine learning based approach. It utilizes a mobile network coverage dataset containing features like signal strength, network speed, latency, tower type, weather conditions, and geographical area type. Various machine learning model including Logistic Regression, Random Forest, SVM, and advanced techniques like Stacking and Voting Classifiers were evaluated. A Convolutional Neural Network (CNN) was also used to capture complex patterns in the data. Model performance was assessed using accuracy, precision, recall, and F1-score. The findings help improve coverage prediction, support efficient network planning, and enhance telecom service quality..*

Keywords: Wireless Network Generation, Machine Learning, Latency, Network Speed, Ensemble Learning.