EV Charging Station Demand Prediction

Project Abstract:-

Electric vehicles are becoming very popular in India, but the number of charging stations is not growing in a planned way. In many places, charging stations are either too crowded or not used properly because they are installed without proper analysis. This creates inconvenience for EV users and slows down EV adoption.

To solve this problem, this project uses data and Machine Learning to find the best locations for installing new EV charging stations. The system studies different factors such as how many people live in an area, how heavy the traffic is, how many electric vehicles are already present, how many charging stations already exist nearby, how far the nearest station is, and how many offices, malls, or public places are around.

Using this information, a Machine Learning model (Random Forest) is trained to decide whether a particular location really needs more EV charging stations or not. The model clearly classifies each area as either a high-demand location or a low-demand location.

To make the system easy to use in real life, the model is connected to a simple web application. Anyone can enter location details into the app and instantly know whether that area requires a new charging station. This project shows how Machine Learning can be used from start to end from collecting data and training a model to deploying it as a real-time application and helps support smart city planning and eco-friendly transportation in India.

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