Micron Hackathon - Team Synergy

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Problem Statement :

Optimal Deployment of Electric Vehicles & Charging Stations

Objective:

Design an algorithm which will tell you where to deploy charging stations in a city. Some examples of inputs to your algorithm will be traffic on that route, connectivity of the route (inner city v/s highway), presence of other charging stations nearby, installation of types of charging station (fast v/s battery swapping v/s …) etc

File Structure:

1. app_dir - contains code for the deployed application
- index.html - Code for front end of the applicTION
- app.py - Backend/API Logic for the application
- final_ev.csv - FInal Preprocessed Extracted Data
- optimal_pred_model3.pkl - saved xgboost model for predcition
2. data_extraction - contains script for data extraction
3. ml_models - contains logic for the algorithms and models used

Tech Stack:

Front-End:

- HTML
- CSS
- Bootstrap

Back-End:

- Flask

Data Engineering/ Scraping:

- OpenStreetMap
- OpenChargeMap
- Geopandas

ML-Models/Miscellenaeous :

- Folium
- Numpy
- Pandas
- Scipy
- XGBOOST

Solution:

- Recommendation of Optimal EV Charging Points in the neighbourhood area of the location given by the user as input.