VIT®
Vellore Institute of Technology
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Final Year Project - UG

School of Computing Science and Engineering (SCOPE)

B.Tech. CSE/CPS/AL AND ML Capstone Project IN HOUSE

General Report (Sept 2022 – November 2022)

Program: B.Tech. CSE **Batch: 2019-2023** **Course Code: CSE1904**

Register No.: 19BCE1027 Name of the Student: Aryaman Mishra Mobile No.6390159999

Project Title:

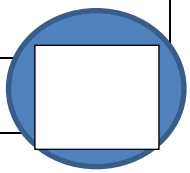
Electric Vehicle Navigation with Parking System

General Report (Sept 2022 – November 2022)

This project would make use of the following background areas: Python,Artificial Intelligence ,Reinforcement Learning ,Routing Techniques ,Distance Algorithm , MATLAB Simulink , Carla.The challenge of this paper involves the following tasks: Mapping of City with high E-Vehicle Usage Adding parameter of battery charge Weighing of inter-city routes Bot creation to display most optimized route via distance(not time) User Interface Search and Hosting. Most papers are unable to operate their algorithms on city landscapes. Research does not account for road constructions ,accidental obstructions and government or private on-street events which requires re-routing. Most papers do not account for method of implementation for public users. Parking and recharging stations are not acconted for. Time to reach destination and recharge to full battery are not taken in as constraints in studies. Taking into accounts the background of the project, our problem statement would be: " In cities having the availabilities of E-vehicles, we are going to create an AI function to map the optimal route in a provided city landscape structure to avoid damage, engine stagnation, battery leakage and discharge by providing users the route to their destination on a point-to-point basis which allows them to reach their destinations on time with the integrity of the structure of the E-Vehicle intact, along with providing time and distance values in case of recharging vehicles and charging stations,taking into account the aspect of slot fulfillment,or go for alternative routes. " The research will promote technology-driven mobility platform, enabling integrated urban mobility across public and private modes of transport. Any application derived would enabling first and last-mile seamless and sustainable connectivity. It would limit public abuse of transports and save Government and companies in cost management related to public usage of provided transports. It would help people in commuting metropolitan cities with high rates of traffic and promote punctuality. Electric vehicles (EVs) are a positive development in this present reality where contamination levels have crested and an energy emergency might foster over the course of the following couple of many years. EV technologies must be progressively enhanced and optimized as they develop into the new transportation and mobility mainstream. The fight against climate change is being waged by governments all around the world, and EVs and renewable energy have been at the forefront of this campaign. Our way of life, which is dependent on energy use, may benefit from the advancement of these technologies. To aid upcoming researchers, five solutions in the enhancement of electric vehicles (EVs) are recognized. A number of relevant and well-known optimization models are also provided, together with a summed up portrayal of their concern details. A variety of various EV validation driving cycles are also looked at and ranked according to how popular they are. Optimize algorithm to treat large city landscape as a huge graph to implement graph operations and routing techniques on. Minimize time of output. Obtain machine power to train epochs and minimize loss. Create User Interface for any person using e-vehicles to commute and limit damage to public e-vehicles which are used in transit. Consider hosting options for Bot or User Interface to deploy on cloud and provide results as soon as possible and observe limits of varying cloud services for application of research.Optimize algorithm to treat large city landscape as a huge graph to implement graph operations and routing techniques on.Minimize time of output. Obtain machine power

to train epochs and minimize loss. Create User Interface for any person using e-vehicles to commute and limit damage to public e-vehicles which are used in transit. Consider hosting options for Bot or User Interface to deploy on cloud and provide results as soon as possible and observe limits of varying cloud services for application of research. Work to be Completed Find open source routing API. Develop framework to convert city landscape into a tree graph. Sort cloud services to carry out different variations of routing algorithm on an extensive city graph. Develop AI-based algorithm to allow subject to reach recharging stations in order to get from point A to point B. Get proper routes to account if in case user reaches destination or needs to head to a recharging station. At a recharging station, look for available slots or reroute to the nearest charging station with a free slot.

Implementation	Scopus Indexed Journal Paper PARKING SYSTEM FRONTEND CREATED WITH BACKEND WORKING PARTIALLY.	
Work Status	***Excellent / Good / Satisfactory / Needs improve***	
Attendance Status	**Regular / Irregular**	***CAM – Max. 5 Marks per week***



Signature of the Student with date

Name & Signature of the Guide with date