Road Mapper

A New Measure To Save Lives

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80%

Problem Statement

Detecting Traffic signs in real time has many issues like:

- A technical hardware issue where autonomous vehicles can't detect signs either because of weather conditions, road randomness , or most dangerously curved highways.
- A technical software issue where autonomous vehicles depend heavily on real time recognition making the chances of misdetection of objects horrifyingly high.

Proposed Solution

Road Mapper offers a reliable solution by:

- Allowing the user to choose starting and destination locations.
- Using Artificial Intelligence combined with Google Maps Directions and Street-View APIs.
- Adding a new precaution measure to be taken in order to make Autonomous Vehicles safer.

Results And Validations

Road Mapper:

- Increases the safety of Autonomous Vehicles dramatically by adding knowledge points along their paths indicating the location and instruction of each sign found on the map detected with a 99% Accuracy.
- Provides a simple solution that can be integrated with complex navigation systems via JSON data transmission.

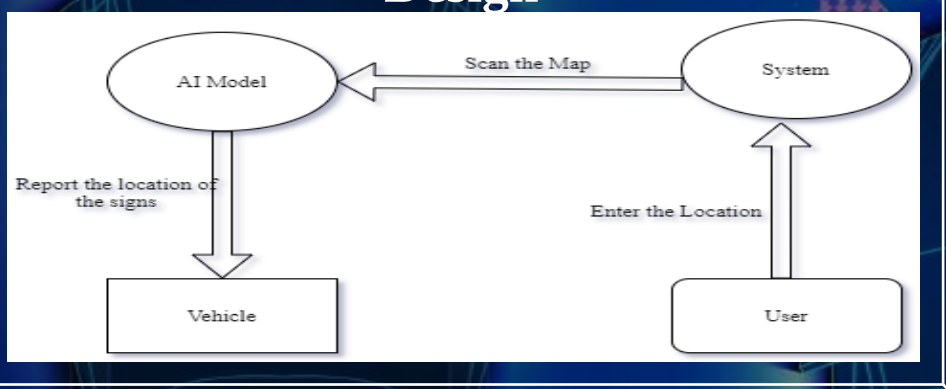
Contributions And Relevance

Road Mapper is implemented to :

- Make driving autonomous vehicles safer in 2021.
- Create a new approach to developing autonomous vehicles.

Specification

Design



Learning Outcomes

- Learning Python including OOP and GUI .
- Learning how to use Neural Network to classify and detect images with high accuracy.
- Learning about models and what makes a good detection model.
- Enhancing team work and collaboration.

Conclusions And Future Work

Road Mapper aids vehicles to detect signs more reliably, for future planning we will improve it by:

- Implementing concrete sign detection model
- Configuring the system to recognize more objects like building patterns, and road layouts.
- Optimizing the model so it will be more reliable.