Traffic Sign Detection And Classification

Re Updated

Environmental Effects And Sustainability

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Environmental Effects

There are both positive and negative environmental effects of traffic sign detection and classification system.

Here are some positive environmental effects:

1. **Road Safety Ensurement:** Our system will ensure the road safety of the community. As road accidents are a common incident nowadays, one of the major reasons for these accidents are for the shortage of proper knowledge of the drivers about the traffic signs and some drivers may have bad vision so that they are not able to identify the traffic signs' meanings correctly. Our system will help the drivers to solve these cases.

2. **Traffic Jam Improvement :** Traffic Jam is another common matter in the populated areas in the country. Everyday a large amount of time is being wasted on the road. The main reason for the traffic jam is the drivers are not capable enough to recognize the traffic signs properly. They mostly do not recognize the traffic signs located on the road and use the wrong lane which causes the jam of the vehicles. Our system will also help to solve this problem.

3. **Automated Cars:** As we are planning to implement our system on automated vehicles in future , it will help the vehicles to run on the road with less technical errors and accidents. Which will hugely benefit the entire society and also the environment.

The negative environmental effects are:

1. **Power And Storage Consumption :** Power or energy consumption is one of the major facts to be considered as a negative environmental effect. This system will need lots of power to be implemented as this is a virtual software based system. So it will consume a huge amount of electricity and solar power for the entire implementation. It will also consume lots of storage where it can store the data.

2. **Impacts On Climate :** After implementing this system in the environment, a lot of harmful gasses and elements for mankind will be produced which will disbalance the ecosystem.

3. **Produce Electronic Wastes :** Our system will need lots of non disposal electric cables and cameras for the implementation. These electronic items will produce too much electronic garbages which will pollute the environment.

Sustainability

Different lighting : In the real time environment, there will be a great possibility for our system to face different types of lighting conditions. Basically different weather causes different types of lighting conditions. So our system has to perform well and identify the traffic signs correctly to sustain in these types of conditions.
To face this challenge, we have trained our model with low light and different exposure images.

Data Shortage: Shortage of the data is one of the major issues for sustaining these types of systems.
We all know that the performance and the accuracy level of a system based on deep learning basically depends on the amount of the data in the dataset. The more data the model trained with, the more accurate results will be returned by the model.
In case of covering the shortage of data in our dataset, we have followed the process called data augmentation.