

SIGNS WITH SMART CONNECTIVITY FOR BETTER ROAD SAFETY

INTRODUCTION

Machine learning is one of the key enabling technologies for autonomous vehicles. An autonomous vehicle can learn how to recognize the surroundings and can base its strategic decisions on the information learnt. It is only a matter of time for autonomous driving to replace of human drivers completely. However, for the time being, there are still important, yet not completely addressed, challenges for autonomous driving. Road-sign classification is one of these challenges. Varying weather conditions, changing lighting throughout the day and occlusion are known to pose challenges to road-sign recognition/classification in real-time applications.

ABSTRACT

A future trend in intelligent transportation systems is “smart road signs” that incorporate smart codes (e.g., visible at infrared) on their surface to provide more detailed information to smart vehicles. Such smart codes make road sign classification problem aligned with communication settings more than conventional classification.

LITERATURE SURVEY

In present Systems the road signs and the speed limits are Static. But the road signs can be changed in some cases. We can consider some cases when there are some road diversions due to heavy traffic or due to accidents then we can change the road signs accordingly if they are digitalized. This project proposes a system which has digital sign boards on which the signs can be changed dynamically. If there is rainfall then the roads will be slippery and the speed limit would be decreased. There is a web app through which you can enter the data of the road diversions, accident prone areas and the information sign boards can be entered through web app. This data is retrieved and displayed on the sign boards accordingly.

Software used

- Arduino IDE
- Embedded C

SURVEY ON ROAD SAFETY

Road traffic accident is a major problem worldwide resulting in significant morbidity and mortality. Advanced driver assistance systems are one of the salient features of intelligent systems in transportation. They improve vehicle safety by providing real-time traffic information to the driver. Road signs play an important role in road safety. To be effective, road signs must be visible at a distance that enables drivers to take the necessary actions. However, static road signs are often seen too late for a driver to respond accordingly.

SURVEY ON SMART CONNECTIVITY SYSTEM

Internet of Things (IoT) is a collection of networks, objects, devices that are connected using the Internet. It interacts with the environment both internally and externally. IoT senses the environment and acts accordingly. It gives the environment with advanced techniques and thus improves the quality of mankind. Internet of Things (IoT) connects the devices, objects through the internet using wireless technology. IoT helps to transfer, communicate, and share the data anywhere at any time via the internet. It creates a remote environment for accessing the data and it has been used in many real-time applications such as smart cities, smart homes, smart energy, smart agriculture, smart industry, smart living, and smart road safety.

TRAFFIC FLOW OPTIMIZATION

The application of in driving safety and vehicle control makes the system collision. on-free by utilizing the predicted model among the s ed devices. A perfect example of traffic ow optimization in Las Vegas for the embedded sensors in traffic light system. The purpose of this project to implement the machine learning technique at an intersection in an area of downtown using IoT-based sensors. These recorded weekly sensor data about the traffic flow and the number of pedestrians transfer to the central hub. Hence, using machine learning data-driven technique, the system intuitu the traffic patterns and predicts the future.

CONCLUSION

A future trend in intelligent transportation systems is smart road signs equipped with smart codes. In addition to incorporating relatively larger amount of information, smart codes constructed via error-correction methods can provide robustness against small scale perturbations. We have introduced a game theoretical adversarial intervention detection mechanism for reliable smart road signs against threats that can perturb the smart codes at small or large scales intelligently. While designing the detection mechanism, we have considered multiple performance metrics regarding the cost associated with losing the opportunity of preventing future attacks by not being able to detect the attack, the cost associated with adversaryinduced decoding error or failure, the false alarm cost, and the ease of a deceptive perturbation

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