

# **Signs with Smart Connectivity for Better Road Safety**

## **Smart Traffic Violation**

### **ABSTRACT**

Population explosion leads to an unprecedented increase in the number of physical objects or vehicles on the road. As a result, the number of road accidents increases due to a very heavy traffic flow. In this project, rash driving and traffic violation is monitored by using computer vision and RFID technology and MEMS sensor, where images or sequence of images provides a better road view the proposed system captures video stream of vehicles in the monitored area to compute the information and transfer the compressed video stream for providing video based solution that is mainly implemented using OpenCV and Python Programming and to avoid the breaking the signal we will be detecting the Vehicle number plate by using the RFID tag situated on vehicle And then resulting data is used to compare with the records on a database and data extracted from RFID Tag.

### **INTRODUCTION**

It is observed that the major hindrance on the road is due to heavy traffic flow during peak hours especially when people commute to work. The total number of vehicles or objects exceeds its capacity by causing a blockage for emergency vehicles such as fire fighter and rescue vehicles, furthermore wastage of fuels adds more to the environmental pollution which is not adoptable for a country's economic growth. In order to develop an efficient, reliable, cleaner and safer mode of transportation, it is necessary to make the road transportation system automated as much as possible. The primary research focus is dedicated towards the detection and tracking of objects, where it finally keeps the count of vehicles in the particular monitored area. The need of the traffic surveillance system is to provide construction engineers and other associates to plan in an economical way and proper decisions were taken based on density of the vehicles and the statistics obtained by the low-cost electronic devices.

### **CONCLUSION**

We have presented a system to alert the driver about the speed limits in specific areas and reduce the speed of the vehicles in sensitive public zones without any interference of the drivers where controls are taken automatically by the use of a wireless local area network. In the initial phase, we designed the basic block and circuit diagram for the system. In the

implementation phase, we executed the hardware with the help of IoT connecting technologies such as the Blynk app. Extensive experiments conducted on IoT and other connecting technologies

## **Traffic management**

### **ABSTRACT**

And in the database, there can be specific information like vehicle's owner name, place of registration, or address, etc. If the ID and the number are matched with the database then it shows the message "authorized person" else "unauthorized person". Both should be matched with the database and rash driving with the help of a MEMS sensor. The proposed method is considered as an economical solution for industries in which cost-effective solutions are developed for traffic management. drivers. The controls are taken automatically by the use of a wireless local area network. The system operates in such a way that the accident information is passed to the vehicles entering the same zone to take diversion to avoid traffic congestion. Keywords: Sensor, Traffic Management, Image Processing, Rash Driving, RFID Technology.

### **INTRODUCTION**

The main cause for the interest in traffic management activity is to utilize the computer vision techniques in real-time conditions. The major challenge that caused hindrance to our work is vehicle segmentation in various atmospheric conditions such as night, snowy or dusty weather conditions. As a solution to it we have used a different pre-processing unit based on Histogram Equalization to improve the resolution of video and morphological processing to add or remove pixels in the boundaries of objects, where video depends on shape and size of the structuring elements before processing towards the next stage. Moreover, it also provides solutions to major problems such as vehicle accidents, vehicle theft detection, managing parking areas, and other security threats.

### **CONCLUSION**

After successful installation of this system, traffic volume is reduced about 16% in NH 08 Bangalore to Mysore Road. Better results can be obtained by widening the road in future which would be more effective. The traffic in SH 80 has also declined by 19.5% as compared to early cases. This process is carried out in a particular area of Annur town as the traffic is very heavy in peak hours in the morning and evening. Initiating this process in every

place where traffic congestion is heavy and the road is narrow gives better results in monitoring and controlling the traffic in a cost-effective way. It mainly results in fuel consumption which will enrich our economy.

## **IOT Road Safety**

### **ABSTRACT**

Road accidents nowadays have become a national catastrophe for overpopulated developing countries. One of the main causes of accidents in the sensitive public zones like school, college, hospitals etc. and sharp turning points is the over speed of vehicles avoiding the speed limit indicated in the traffic sign board. Drivers endanger the lives of passengers, pedestrians and fellow drivers by not limiting their vehicle speed in these sensitive public zones. The main objective of the proposed system is to operate the vehicles at a safe speed at critical zones minimizing the possible risk of unwitting accidents and casualties. This project paves a system to alert the driver about the speed limits in specific areas and reduce the speed of the vehicles in sensitive public zones without any interference of the drivers. The controls are taken automatically by the use of a wireless local area network. The system operates in such a way that the accident information is passed to the vehicles entering the same zone to take diversion to avoid traffic congestion.

### **INTRODUCTION**

Technology has brought fine changes into every portion of our life by making it smart and reliable. There are many situations in which technologies can be used to avoid accidents in roads which opens a wide window for the requirement of Smart Road System. With the dynamic changes in the models of the vehicles the roads need to have the same ability to face them. Evolving towards the future, the roads need to be built with advanced sensors and antenna systems to have a pace with the new era. The design involves the road side units and vehicle side units as part of an intelligent transport system involving Internet of things (IOT). This project has designed a system to alert the driver about the speed limits in specific areas by reducing the speed of the vehicles in sensitive public zones without any interference of the drivers where controls are taken automatically by the use of a wireless local area network. The main objective of the proposed system is to operate the vehicles at a safe speed at critical zones minimizing the possible risk of unwitting accidents and casualties. Besides, the system is capable of detecting the accidents and giving notification to the control room. The system

operates in such a way that the accident information is passed to the vehicles entering the same zone to take diversion to avoid traffic congestion.

## **CONCLUSION**

We have presented a system to alert the driver about the speed limits in specific areas and reduce the speed of the vehicles in sensitive public zones without any interference of the drivers where controls are taken automatically by the use of a wireless local area network. In the initial phase, we designed the basic block and circuit diagram for the system. In the implementation phase, we executed the hardware with the help of IoT connecting technologies such as the Blynk app. Extensive experiments conducted on IoT and other connecting technologies.

### **Future enhancement**

We can enhance this system by implementing a camera using Raspberry pi, GSM module in case of network unavailability and low RAM module/zigbee module for long range communication.