**DEPARTMENT OF ELECTRONICS AND COMMUNICATION**

**ENGINEERING**

**IBM – LITERATURE SURVEY**

**PROJECT TITLE**

**SIGNS WITH SMART CONNECTIVITY FOR BETTER ROAD SAFETY**

(2022-2023)



**GUIDE NAME: Dr.R.MOHANA PRIYA**

**SUBMITTED BY**

**TEAM ID : PNT2022TMID14066**

**SUNDARESAN E (19105108)**

**SURENDHAR B (19105109)**

**SURENDARA KUMAR S (19105110)**

**THEPANRAJ R (19105117)**

**FINAL YEAR B.E. (ECE)**

**PAAVAI ENGINEERING COLLEGE,**

**Paavai Nagar, NH-7, Pachal, Namakkal-637018, Tamil Nadu**

**ABSTRACT**

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 going to use are Arduino IDE, Embedded C. Hardware used, Node Mcu ESP8266.

**LITERATURE SURVEY**

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| **S.NO** | **TITLE OF THE PROJECT** | **ADVANTAGES** | **DISADVANTAGES** | **TECHNOLOGY USED** |
| **1.** | Vehicle to everything (V2X) | 1.Improving Traffic Management  2.Improving Fuel Efficiency  3.Providing Driver Assistance  4.Direction and Route Optimization  5.Prevents Possible Crashes | 1.Security Risks  2.Concerns of Liability  3.Privacy Issues  4.Potential Distraction to Drivers | 1.GPS  2.road sensors  3.Dedicated Short-Range Communications (DSRC) technology |
| **2.** | Reliable Smart Road Signs | 1..Detection of congestion and reduction of traffic  2.Traffic light timing in real-time  3.Safety from road accidents  4.Reduction in pollution | 1.Technological infrastructure and public acceptance  2.Capital intensive | 1. Speed sensors 2.Acoustic sensors  3. IP CCTV cameras  4. Smart traffic lights  5. Condition and weather monitoring systems  6.Digital signage. |
| **3.** | An IOT Architecture for Assessing Road Safety in Smart Cities | 1.Less congested streets  2.Improved traffic and pedestrian safety  3.Extended connectivity alongside transportation infrastructure  4.Enhanced parking and e-tolling. | High cost of most applications | 1. V2I (Vehicle to Infrastructure)  2. V2V (Car to Car)  3.V2P (Vehicle to People)  4.V2N (Vehicle to Network) technology. |
| **4.** | Smart vehicle connectivity for safety applications | 1.Smart vehicle connectivity for safety applications  2.Reduce Highway accidents | At risk of being discovered and hacked | 1.Wi-Fi  2.GPS  3.Dedicated Short Range Communication  (DSRC).  4. VANETS |
| **5.** | Improved Traffic Sign Detection and Recognition  Algorithm for Intelligent Vehicles | Accurate recognition rate and average processing time are markedly improved | The inclusiveness and anti-error recognition of the traffic sign recognition algorithm are not optimized. | 1.SURF technologies |
| **6 .** | Smart roads: A  state of the art of  highways  innovations in theSmart Age. | To increase transport  efficiency,  Drivers’ and pedestrians’  safety, clean energy  consumption,  And to promote  sustainability. | Loss of privacy  and security of  data due to a large  amount to store. | 1.End user Internet service systems  2.Internet of Things  3.Artificial Intelligence  4.Edge Computing are used  for data collection and road  automation works |
| **7.** | Geographic  Information  Systems to  Improve Road  Safety | Pedestrian  collisions and clashing,  which together account  for more than  65% of all fatal accidents  will be reduced. | Complexity may  occur due to  improper traffic  management | 1.DCRE system  2.RTA method |
| **8.** | Traffic Sign  Board  Recognition and  Voice Alert  System using  Convolutional  Neural Network | Traffic signs are  automatically detected  using the live video  stream. | Raspberry Pi  board at one's  discourse for  implementation  which is quite  costly | 1.Raspberry Pi, 2.Voice  3.Alert System . |
| **9.** | Vision-Based  Traffic Sign  Detection and  Analysis  for Intelligent  Driver Assistance  Systems | Lane  Detection, driver  distraction detection, and occupant pose inference. | The problem in  TSR is the lack of  use of standard  Sign image  databases. This  makes  comparisons  between contributions  very hard. | 1.The KUL Data set includes four recorded sequences, tracking  experiments |
| **10.** | Traffic Sign  Detection for  Intelligent  Transportation  Systems | Real time information delivered to the driver | It do not  include images  captured under  unsuitable  conditions  (At night, cloudy  weather, etc.) | 1.Road sensors, in-vehicle  navigation services,  electronic message  Signs, traffic management  2.Monitoring system alerts  the driver to potential  danger, or to avoid collisions  by implementing safeguards. |