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Brainy Road Accident Mitigation System

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Abstract: ***Many precious lives are lost due to road accidents because of over speeding and negligent driving every day. This is the matter of great concern for departments that deal with road safety and for the citizens. It is estimated that 80% of crashes and 65% of near collisions are due to driver's lack of attention to traffic for three seconds before the event. The number of road crash deaths has increased by 31% from 2007 to 2017. As per the survey on the road accidents in India, according to the Ministry of Road Transport and Highways, 1, 50,785 people were killed and another 4, 94,624 were injured in 4, 80,652 road crashes in India in 2016. Now day's accidents are taking place at large scale. Majority of the accidents occurs due to the over speeding of vehicles, though there are speed limiting boards placed at the roadside of highways also at the road side in the city. But none of vehicles (drivers) follows the speed mentioned in the speed limit boards, due to which accidents occurs.***
Keywords: Brainy Road Accident Mitigation System, yolo algorithm

I. INTRODUCTION

To overcome such over speeding of vehicle problem we have come up with system which intelligently controls/slowdown the speed of the vehicle and locks the speed to that specified speed mentioned in the speed limit boards. Even if the driver tries to accelerate he cannot accelerate it. Since speed of the vehicle has been locked by the proposed system. This proposed system consists of central server which dynamically keeps monitoring the weather information of different cities and sends these data to respective cities local servers. These local server in turn depending upon the weather information received, manipulates the speed limit to be set (it might be for either highway or in the city) and sends the speed limit information to the digitalized speed limit boards which consists of the device (device kept at roadside) which accepts the information of the speed limit and the device consists of high range router, it keeps on sending the speed limit information to all the vehicles using MQTT (Message Queuing Telemetry Transport) protocol. Whenever a vehicle comes into the routers range the system(device) which is placed in every vehicle, gets activate the Wi-Fi and gets connected with the external device(kept at road side via router) which has send the speed limit information through MQTT (Message Queuing Telemetry Transport) protocol. Then the processor of the device kept inside the car reads the current speed of the vehicle and compares with the information of speed received, if the speed of vehicle is greater than received speed limit information then the pressure at the accelerator is released slowly by a device which is kept at the pivot of gas pedal to make the vehicle comes down to the speed specified by the speed limit boards. So by this proposed system the accidents rate can be minimized to larger extent just by making the vehicle function intelligently all this is possible only by the proposed system is installed in the vehicle. This device (proposed system) is not to be installed in the emergency vehicles like ambulance.

II. LITERATURE SURVEY

Name of the Paper	Existing System	Proposed System
1.SONI KUMARI"REVIEW OF AUTOMATIC SPEED CONTROL OF VEHICLE USING RFID TECHNOLOGY"[1541-1543]May 2016	RFID tags are used where the speed limits of the roads are fixed	MQTT protocols are used to communicate between onboard unit and Road Side unit and speed limits of the roads are dynamic
2.AMRUTA RAMASE"AUT OMATIC SPEED CONTROL OF VEHICLE USING RF COMMUNICATION"[419-421]March 2018	This technology can be implemented only in electronic vehicles but not on engine vehicles	The proposed system can be implemented on both electronic vehicles and engine vehicles
3.RASHMI R K"AUTOMATIC SPEED CONTROL SYSTEM FOR VEHICLES USING COLOR AND HALL SENSORS"[2831-2832]April 2017	Only 3 speed limits can be implemented that is red green and blue	Speed limits can be set to the road dynamically based on the road condition and weather condition

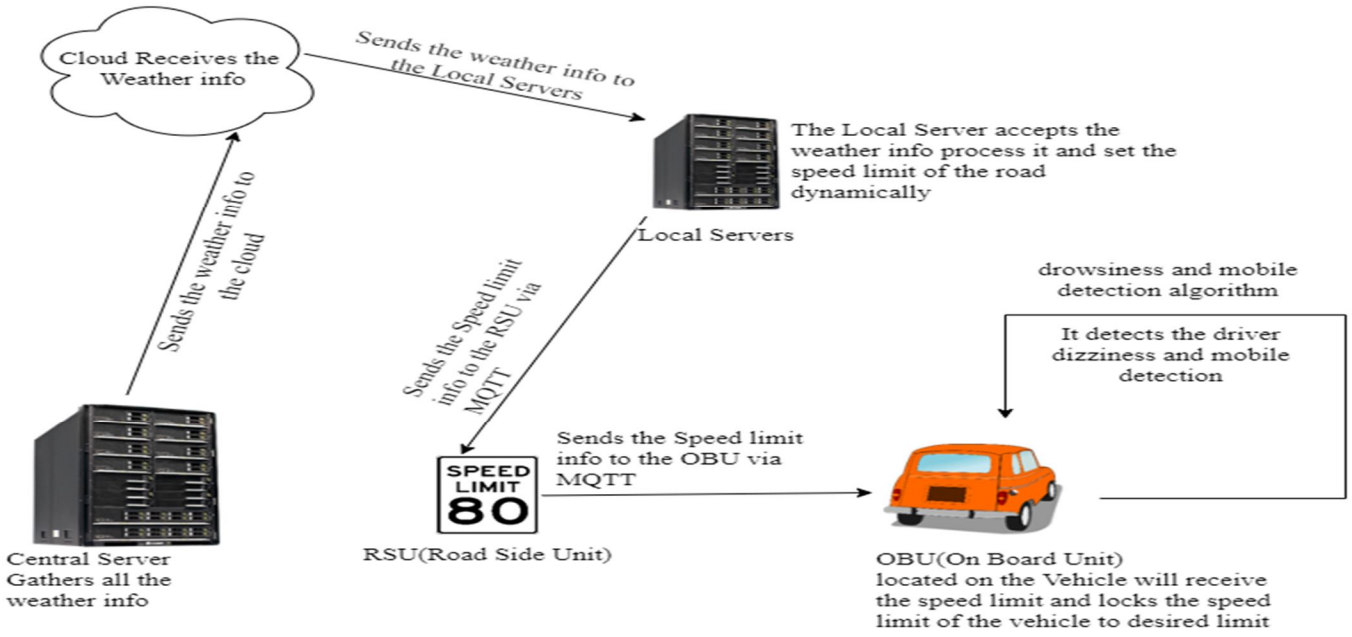
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4.VASUJADEVI M"AUTOMATIC SPEED CONTROL AND ACCIDENT AVOIDANCE OF VEHICLE USING MULTI SENSORS"[65-67]July 2014	This Technology takes only speed limit of the road into consideration	The proposed system also takes the distress level of the driver and warns him when something is wrong

III. PROBLEM STATEMENT

To design and develop a system that keeps the track speed of the vehicle, driver's dizziness and cell phone detection and reduces the number of accidents.

IV. METHODOLOGY



V. RESULTS

The proposed system is to reduce the accident due to rash driving. For example if the driver crosses the speed limit , the system can automatically reduces the vehicle speed and lock the speed of the vehicle equal to the speed limit.It also reduce the accident due to drivers dizziness and usage of cell phone, If the driver wears the glasses then the dizziness detection will not work.

VI. CONCLUSION

The project has a great importance in termination and reduction to a large extent of accidents, this system can be applied to 4 - Wheeler and other heavy vehicles.

VII. ACKNOWLEDGEMENT

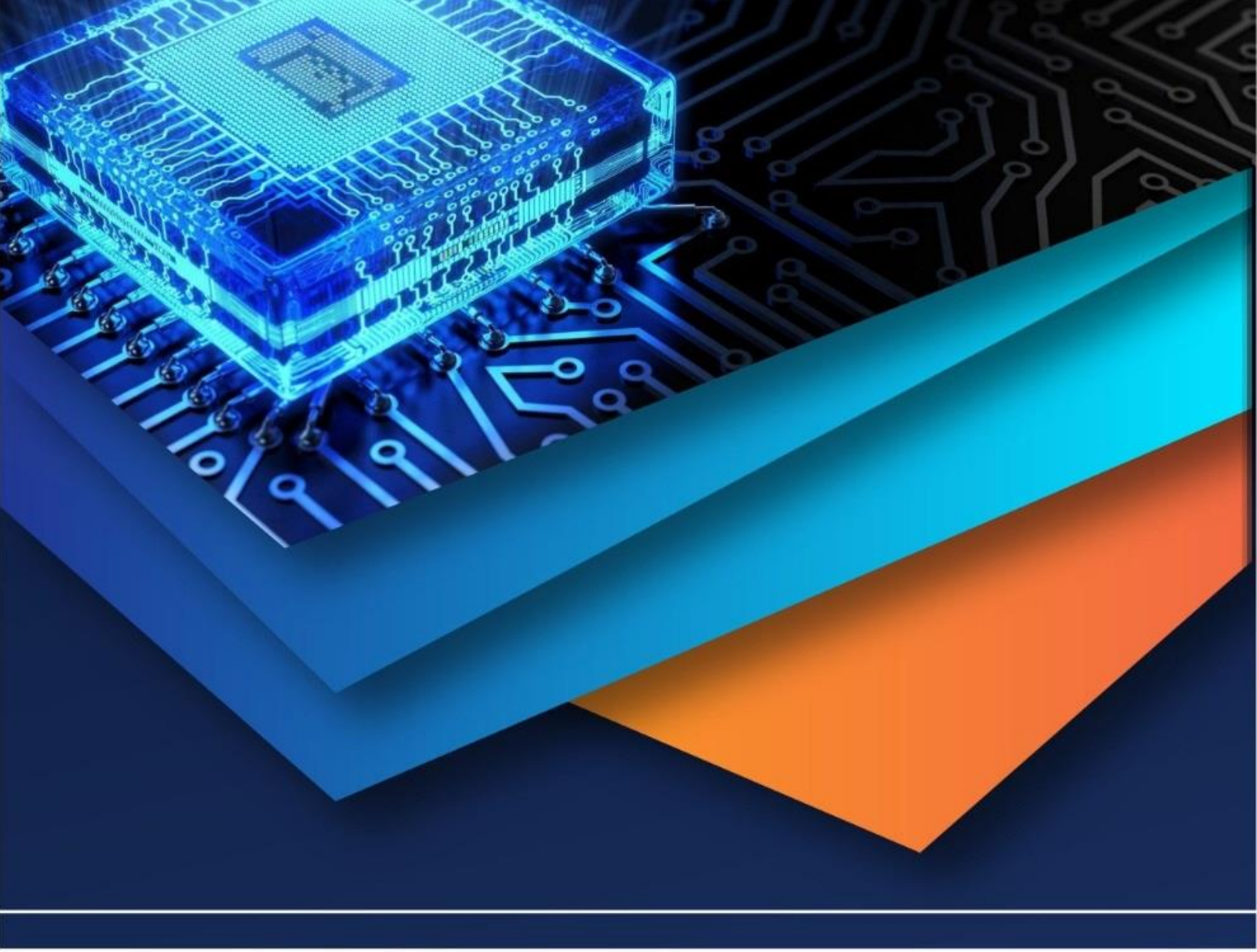
Addressing to our beloved and highly esteemed institute, "Ballari Institute of Technology &Management" for having well qualified staff and labs provided with the required equipment.
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