



Light Dimmer with Implementation of Data Abstraction While Crashing

¹Ansa Babu, ²Anu Joseph, ³Filiya Francis, ⁴Krishnadas J

^{1,2,3}U.G. Scholar, Department of Computer Science & Engineering,

⁴Assistant Professor,

^{1,2,3,4}Sahrdaya College of Engineering and Technology, Kodakara, Kerala, India.

ansababu95@gmail.com, anukj315@gmail.com, filiya95@gmail.com, krishnadaskumar@gmail.com

Abstract- The paper proposes a system to automatically dim the headlight of opposite vehicles by changing from high beam to low beam. The system envisioned is automatic collision avoidance and detection. Many methods are available to dim the headlight of vehicles. In the earlier days dip mechanism was used. Similarly there are several mechanisms for automatic accident detection. An automatic alarm gadget for traffic accidents is presented. It can consequently discover a car crash; hunt down the spot and after that send the essential data to hospitals. This system will highly aid the search and rescue of vehicles that have met with an accident.

Keywords- Vehicular communication, V2V, V2I, ITS, accident, GPS, GSM, map matching, automatic accident detection, Headlights Dimmer, Light Dependent Resistor (LDR)

1. INTRODUCTION

The purpose of our project is to reduce accidents. The death rate is increasing day by day due to accident. The requirement of headlight is very common during night travel. The same headlight which assists the driver for better vision during night travel is also responsible for many accidents that are being caused. The headlight has to be adjusted according to the light requirement by the driver. High beam of headlight of an on-coming car has blinding effect and decreases visibility during night driving dangerously. The drivers of most vehicles use high, bright beam while driving at night. This causes a discomfort to the person traveling from the opposite direction. He experiences a sudden glare for a short period of time. This is caused due to the high intense headlight beam from the other vehicle

coming towards him from the opposite direction. Our survey paper contains ideas about how to dim the head light of opposite vehicles which has high-beam switched-on from high-beam to low-beam and also to detect accident using an automatic alarm gadget.

2. METHODOLOGY

In [1], an automatic alarm gadget for traffic accidents is presented. It can consequently discover a car crash; hunt down the spot and after that send the essential data to hospitals within two seconds covering topographical directions, the time and circumstances in which an accident happens. GPS programming fitted in the vehicle will now begin to communicate with the

satellite and get the scope and longitude values and send the data to the incorporated server. At that point the server will search for the nearest hospital and send the data to the hospital. The hospital will then be sending the emergency vehicle to the accident zone. Hence the injured individuals will be spared at the earliest opportunity. This procedure will spare time specifically for the regions in the external piece of primary zone.

In [2], a new framework is implemented in which an automatic detection of accident through sensors is provided in the vehicle. Road accidents and traffic congestion are the significant issues in urban ranges. Right now there is no innovation for accident detection. Likewise because of the deferral in coming to of the rescue vehicle to the accident area and the traffic congestion in between accident location and hospital increases the chances of the death of victim. There is a need of acquainting a framework which decreases the death toll because of mishaps and the time taken by the rescue vehicle to achieve the healing facility. To defeat the downside of existing framework a new framework is implemented in which an automatic detection of accident through sensors is provided in the vehicle. A primary server unit houses the database of all clinics in the city. A GPS and GSM module in the concerned vehicle will send the area of the mishap to the principle server which will surge an emergency vehicle from a closest clinic to the mischance spot. Alongside this there would be control of traffic light signals in the way of the rescue vehicle utilizing RF correspondence. This will minimize the time of rescue vehicle to achieve the doctor's facility. A patient monitoring system in the ambulance will send the essential parameters of the patient to the concerned hospital. This framework is completely automated, therefore it finds the accident spot, controls the traffic lights, helping to reach the hospital in time.

In [3], a system is proposed to detect an accident from the map matched position of a vehicle by utilizing the GPS speed data and map matching algorithm and send accident location to an Alert Service

Centre. The GPS gives speed and position in every 0.1 second. The position information will be utilized as a part of the map matching algorithm to find the vehicle on the road. The present speed is compared with the previous speed in every 0.1 second through a Microcontroller Unit. At whatever point the speed will fall underneath the safe figured limit speed, the framework will create an accident situation. It will check the vehicle area from map matching module and create an accident situation if the vehicle is found outside the road network. This will reduce the false accident detection radically. The map matched accident area is then sent by using the GSM system. The proposed framework will save many accident victims with timely rescue.

In [4], a new technology named VANET has been introduced. VANET comprises of vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communications supported by wireless access technologies such as IEEE 802.11p. This advancement in wireless communication has been conceived to enhance road safety and motor traffic efficiency in near future through the development of Intelligent Transport Systems (ITS). Subsequently, government, auto-versatile businesses and the educated community are vigorously joining forces through a few progressing research tasks to build up models for VANETs. This paper gives an overview on current research state, challenges, possibilities of VANETs as well the way forward to achieving the long awaited ITS.

In [5], a programmed front lamp dimmer which utilizes a Light Dependent Resistor (LDR) sensor has been intended to diminish the front light of on-coming vehicles to evade human eye impacts. This consequently exchanged the high shaft into low bar, accordingly decreasing the glare impact by detecting the light power benefit of drawing closer vehicle furthermore wiped out the necessity of manual exchanging by the driver which was not done at all times. Mat lab programming was utilized in planning the venture. The Keil programming was additionally utilized to program the microcontroller. The framework

gadget could naturally switch the front light to low pillar when it detected a vehicle drawing nearer from the inverse side utilizing LDR sensor. It was watched that the most extreme spread edge of the fog light was 1350. At the time the spread light from other sources achieved the sensor, its power would be especially diminished beneath the activating edge level. The affectability of a photograph identifier decided the relationship between the light falling on the gadget and the subsequent yield signal. A server module could be incorporated to this framework for accepting and putting away front light beams parameters data in a database application.

In [6], a technique for keeping a mishap utilizing an innovation is called ultrasonic. This anticipate concentrates on building an easy to understand gadget that has practical experience in distinguishing interruptions other than doing short proximity deterrent identification. Vehicle wellbeing can be enhanced by expecting an accident before it happens and in this way giving extra time to convey wellbeing innovations. Notices can resemble signal if the driver is drawing nearer a pothole or any check, driver might be cautioned in cutting edge with respect to what the street involves. The venture's definitive point along these lines concluded as, one to fabricate a general, simple to-use and adaptable framework that can counteract deadly mischance. It likewise points counteractive action after the mischance has occurred utilizing GPS and GSM innovations.

In [7], Pre-Collision Systems (PCS) have been created to moderate the inborn dangers walkers face when going close vehicular activity. Be that as it may, the progression of these accidents is complex, with numerous intensifying variables making them hard to show. The most overwhelming component over these impacts is vehicle speed, a solid determinant of time to impact. In any case, the elements of these accidents are perplexing, with numerous aggravating elements making them hard to model. The most predominant component over these impacts is vehicle speed, a solid determinant of time to impact and the seriousness of

damage. An arrangement of vehicles paces at effect is created in view of the Pedestrian Crash Data Study (PCDS). These rates are then connected with various sorts of accident geometries. At long last, a calculation is created to streamline the velocity dispersion into a little arrangement of testable rate situations. Our outcomes propose that for some situations, especially those including turns, the pace dissemination can be sensibly spoke to by maybe a couple vital paces. This extraordinarily improves development of walker pre-crash situations.

In [8], the auto-dim of vehicle head light using RF-wave is presented. The idea project is about naturally dimming the head light of inverse vehicles which has high-beam changed on from high-beam to low-beam. This is done utilizing the RF wave to convey the vicinity of the on-coming vehicles furthermore a photodiode to distinguish the general force of the high-beam to the driver. Every vehicle is fitted with the RF transmitter and receiver to recognize the closeness of the vehicles. A photodiode is to distinguish the force of the high-light emission inverse vehicle, in the wake of affirming the nearness of the vehicle. The technology used in this project is simple. RF used by cars will have a unique frequency such that it will help us to reduce the confusion that light source is from car or from street light. At whatever point a vehicle from inverse comes quite close to another vehicle, the RF module give an interrupt to microcontroller. At that point microcontroller then takes the perusing of photodiode, which gives the estimation of light power. Depending on the light power micro controller can dim the head light.

In [9], automatic headlight dimmer a prototype for vehicles is introduced. Drivers of most vehicles utilize high, brilliant Headlight while driving at night. This causes a distress to the individual going from the other way. He encounters a sudden glare for a brief period of time. This is created because of the high serious intense beam from the other vehicle coming towards him from the other way. This glare causes many visual problem such as Toxler effect, resulting in

road accident. So, a new model called automatic light dimmer was introduced which automatically switches the head light from high intensity to low intensity and thus reduces accident. This device should be installed in all vehicles. Until the vehicle sense the opposite vehicle it can move with high beam. But when the LDR sense the bright light it means that opposite vehicle is arriving. So the device will automatically switch high beam to low beam. But if the head light is already in low beam then no switching will occur. As the vehicles crosses the intensity of light falling on sensor goes on decreasing and light will be switched back to original mode. The placement of the device must be ought to be in line with driver. This system is easy to install and reduces eye problems.

In [10], Electronic Head Lamp Glare Management System for Automobile Applications is presented. Headlamp glare is an issue that has developed as far as open mindfulness over the previous decade. High light emission of an on-coming auto has blinding impact and cause many visual problems. The drivers of most vehicles utilize high, splendid bar while driving around evening time. This causes an inconvenience to the individual going from the other way. We are relied upon to diminish the front lamp to maintain a strategic distance from this glare. This idea is extremely valuable in the vehicle field applications, which gives safety of driver during night driving. The same headlight which helps the driver for better vision amid night travel is likewise in charge of numerous mischance's that are being brought on. The driver has the control of the head light which can be changed from high beam to low beam. The model that is has been outlined, lessens this issue by really diminishing down the splendid front lamp of our vehicle to low shaft consequently when it detects a vehicle at close proximity approaching from the other direction. The headlamp glare administration gadget is a security embellishment, which naturally moves the headlights position as per the current lit air. The crucial target of the gadget is to promote night time street road safety by minimizing glare. The gadget is sufficiently wise to comprehend lit and dark roads and works the

headlamps appropriately. Headlamp glare administration framework can be fitted in a vehicle. This gadget has been effectively tried on real street conditions. The framework automatically avoids high beam from the inverse vehicles in this way gives clearer and more secure drive during the evening.

3. CONCLUSION

Several mechanisms are available to detect the road accidents automatically. The accident spot will be detected and the basic information like time and location will be send to the nearby hospital. Similarly the headlight of vehicles can be automatically dimmed when it comes in the opposite direction. This reduces the irritation caused to the drivers due to the intense beam from the headlights. Sometimes the vehicles that have met with an accident do not stop at the accident spot. These vehicles can be caught by implementing a system that helps to exchange the data between these vehicles at time of accident. The data will consist of vehicle details and owner name. Hence the vehicles can be caught even if it doesn't stop at the accident spot by obtaining its data from the other vehicle.

REFERENCES

- [1] C.Vidya Lakshmi, J.R.Balakrishnan, M.E Computer Science Engineering Anand Institute of Higher Technology, Affiliated to Anna University, "Automatic Accident Detection via Embedded GSM message interface with Sensor Technology", International Journal of Scientific and Research Publications, Volume 2, Issue 4, April 2012
- [2] Bhandari Prachi, Dalvi Kasturi, Chopade Priyanka, "Intelligent Accident-Detection And Ambulance- Rescue System", International Journal Of Scientific & Technology Research Volume 3, Issue 6, June 2014
- [3] Md. Syedul Amin, Mohammad Arif Sobhan Bhuiyan, Dept. of Electrical, Electronic and Systems Engineering, Universiti Kebangsaan Malaysia, Mamun Bin Ibne Reaz, Salwa Sheikh Nasir, Dept. of Electrical, Electronic and Systems Engineering, Universiti

Kebangsaan Malaysia, "GPS and Map Matching Based Vehicle Accident Detection System", IEEE Student Conference on Research and Development(SCOReD), 16-17 December 2013, Putrajaya, Malaysia

glare management system for automobile applications", International Journal of Research in Advent Technology, May 2014

- [4] Elias C. Eze, Sijing Zhang and Enjie Liu, Centre for Wireless Research, Institute for Research in Applicable Computing (IRAC), Department of Computer Science and Technology, University of Bedfordshire, "Vehicular Ad Hoc Networks (VANETs): Current State, Challenges, Potentials and Way Forward", Proceedings of the 20th International Conference on Automation & Computing, Cranfield University, Bedfordshire, UK, 12-13 September 2014
- [5] Okrah.S.K, Williams.E.A and Kumassah. F, "Design And Implementation Of Automatic Headlight Dimmer For Vehicles Using Light Dependent Resistor (LDR) Sensor", International Journal Of Emerging Technology And Innovative Engineering Volume 2, Issue 4, April 2016
- [6] Sayali H. Suryavanshi, Shreya R. Vaingankar, Smit S. Patil, Prof. Sayali, K.C. College of Engineering & Management studies & Research ,Kopri , Thane, "Automobile Accident Prevention Using Ultrasonic", International Journal of Advanced Research in Computer Science and Software Engineering, Volume 5, Issue 3, March 2015
- [7] David H. Good and Rachel L. Abrahams, "Vehicle Speeds for Pedestrian Pre-Crash System Test Scenarios Based on US Data", 2014 IEEE 17th International Conference on Intelligent Transportation Systems (ITSC) Qingdao, China, Oct. 2014
- [8] Nagadeesh N, N.Viswa Anoop, Midhun PM, Yeswanth Golla, Prof.S.Ravi Shankar, Asst.Prof.P.Sathish Kumar, "The auto-dim of vehicle head light using RF-waves", International Journal of Scientific & Engineering Research, October-2013
- [9] Muralikrishnan.R11B.E, Electrical and Electronics Engineering, Sri Venkateswar College of Engineering, Tamil Nadu, India, "Automatic headlight dimmer a prototype for vehicles", International Journal of Research in Engineering and Technology, |Feb-2014
- [10] Sushil Kumar Choudhary, Rajiv Suman, Sonali, Honey Banga, G.B.Pant University of Agriculture & Technology Pantnagar, India, " Electronic head lamp