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Accident Prevention Road Safety Model

Suchita Subhash Ghatte, Sonali Raju Nandale, Sonali Raju Koli, Vaishnavi Babaso Shinge.

Department of Electronics and Telecommunication Engineering, D.K.T.E. SOCIETY'S YASWANTRAO CHAVAN

POLYTECHNIC, ICHALKARNJI, Ichalkaranji, Maharshtra, India

ABSTRACT: The constantly growing transport sector has resulted in an increase in accidents every day. The accident mainly occurs due to our carelessness and breaking of traffic rules. Indirect left-turn treatments have been increasingly used as design alternatives to address problems that are associated with left-turn egress manoeuvres from side streets or driveways at two-way stop-controlled intersections. In this project, the proposed system aims to avoid collisions between vehicles mainly occurring in U-turn bends, hair-pin bends, short corners, blind curves, etc. By alerting the vehicle drivers about the accidents that might occur.

The accidents due to the negligence of the driver are prevented by warning him through the buzzer and light indication. The vehicle is detected by IR and sends the signal to the controller and shows the LED indication about the vehicle has ecosystem This system makes use of infrared sensors and other embedded systems. On road, accident is a major issue of concern. Even with all modern developments in the field of vehicle design, road lane design and management, accidents do occur. Timely accident detection and taking immediate action with respect to emergency health care of victims by informing an emergency canter such as a hospital or a police station about the accident on time plays a vital role in human safety and road traffic management.

KEYWORDS: ACCIDENT PREVENTION, ROAD SAFETY.

I. INTRODUCTION

During the calendar year 2010, there were close to 5 lakh road accidents in India, which resulted in more than 1.3 lakh persons. These numbers translate in road accident every minute, and one road accident death every 4 minutes. Unfortunately, more than half the victims are in the economically active age group of 25-65years. In India 137,000 people are killed because of road accidents. That is about 377people per day. In that 3.7% because of failed to look the road. The solution for this problem is alerting the driver about the obstacle or vehicle. Usually horn is used for this purpose. But in the rainy seasons horn will not be heard. Some people will not use horn itself. So horn is not a good solution to solve this problem. These are the major reasons for accidents. To avoid these problems in curve roads we are introducing sensor based accident prevention system. That is we are keeping .IR sensor in one side of the road before the curve and keeping a LED light after the curve. At that time light will glow at the other side of the curve. In the absence of the vehicle the signal will not be received by the sensor and the light will not glow. As soon as the light glows driver can slow down his vehicle and he could even stop it if it's necessary

II. PROPOSED METHODOLOGY

The functions of the various components used in this system are explained below. Arduino microcontroller is Used for its best feature such as high processing speed, easy to use analog-to-digital conversion, and low Power requirement and capable of performing multitask at a time. It requirement and capable of performing Multitask at a time. It operates on 5V DC Power supply. It performs all control operations like fetching input Signals, processing it and providing output to other systems like LED and buzzer.

The microcontroller program is programmed in embedded C using Arduino IDE. It is interfaced with GSM module through serial Communication. The infrared sensor pair is connected to a controller and it transmits the signal directly to the Controller on detecting the vehicle approaching towards the hairpin bend earlier at a distance of a few meters. When the vehicle is detected, the controller performs the necessary operations to avoid the accidents. i.e., by signaling the vehicles approaching on the other side of the road and sounding the buzzer if any vehicles tries for signal jump.

Working

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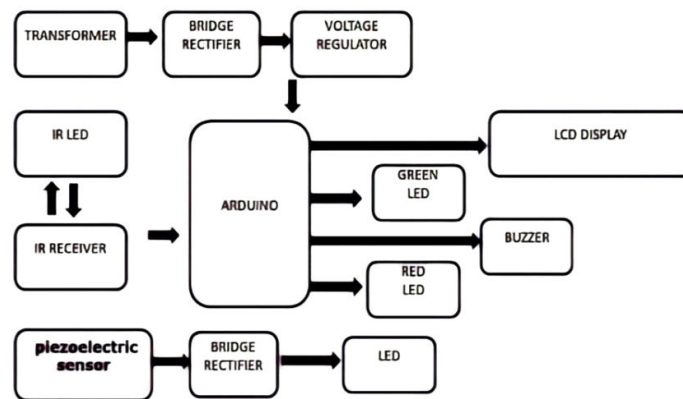

Fig.2. Blocks of accident prevention road safety model.

Literature survey for problem identification and specification

Literature survey:

In this year, many efforts have been taken by the government for Smart City and in that, they try to make system automatic rather than the existing system. There are some traditional methods are available and because of those human efforts get reduced but the wastage of electricity and light pollution still existed. So for that implementing a more reliable system is required. For any intelligent system, it should operate automatically and it requires the systematic way to operating to maximize the quality and lifeline.

• **Aravinda B, Chaithra lakshmi C, Deeksha, Ashutha K:** From their report, it is concluded Accident prevention in U-turn, hilly Ghats and mountain road using modern sensor technology, which uses Arduino UNO, LED etc.

• **R.Saranya, R.Arun Kumar :** This paper conclude that, Accidents may take place in various factors drunk and driving, Texting while driving, Speeding, Distractions, Sleeping while driving. Among Drowsiness is reason for most of the accidents. While driving at the speed of 100km/hr. driver falls sleepy within 4 seconds the buzzer will enables

• **Ranga Sreedhar Galla :** He has studied the basic aim of their paper is to reduce accidents on hilly and slippery roads .In curve roads the other road end of vehicle cannot seen by driver. At night time accidents may happens by intensity of head light from opposite side of vehicles. Also, the light intensity problem occurs both curved roads and mountain roads; Thousands of people lose their lives. The solution for this problem is alerting the driver about the vehicle coming from opposite side. This is done by keeping an ir led in one side of the road before the curve and

keeping a LED light after the curve, so that if vehicle comes from one end of the curve sensor senses and LED light glows at the opposite side.

Project Objectives
•   Used to avoid road curve accidents.
•   The project is based Arduino.
•   IR module is used to detect the vehicle.
Alerting driver by glowing LED light and Buzzer indication.

III. CONCLUSION AND FUTURE WORK

The conclusion introduces the drawbacks in the existing system , As a result in a new concept of U tern accident avoidance using arduino also, The system maintenance cost is reduced because the LED has more life then previous lights. The new system of IR sensor is beneficial for avoiding the accidents that may occur near U turns.

The Purpose of is to decrease the number of accidents in curve roads. This is done by alerting the driver by means of LED light which glows when vehicle comes from the other side of the curve. By this we can save thousands of lives in the curve roads. The outcome of this model is to take safety measures, precautions while driving and it is useful to the traffic police to detect the speed of rash driving. By implementing this idea according to this model we can save thousands of lives.

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📱 9940 572 462 🟢 6381 907 438 ✉ ijircce@gmail.com

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