PRO FORMA FOR THE APPROVAL OF THE THIRD SEMESTER MINI PROJECT

(Note: All entries of the pro forma for approval should be filled up with appropriate and complete information. Incomplete Pro forma of approval in any respect will be rejected.)

Mini Project Proposal No : _____
(Filled by the Department)

Academic Year   : 2020-2022

Year of Admission : 2020

1. Title of the Project   : DRIVER VIGILANCE SYSTEM

2. Name of the Guide   : Ms.FEBIN AZIZ

3. Number of the Student: MES20MCA-2048

4. Student Details

Name (in BLOCK LETTERS)	Roll Number	Signature
1. SHAHARBAN MP	48	

Date:07/12/2021

Approval Status :   Approved / Not Approved___

Signature of
Committee Members

Comments of The Mini Project Guide   Dated Signature

Initial Submission   :

First Review   :

Second Review   :

Comments of The Project Coordinator   Dated Signature

Initial Submission:

First Review

Second Review

Final Comments :   Dated Signature of HOD

INTRODUCTION

In recent years, the increasing number of vehicles on roads leads to an increase in traffic accidents. It is found that distracted driving was related to one-tenth of fatal crashes. Distracted driving fatalities have increased more rapidly than those caused by drunk driving, speeding and failing to wear a seat belt. A driver is considered to be distracted when there is an activity that attracts his/her attention away from the task of driving. Distracted driving is an established cause of motor vehicle crashes for all ages. With the rapidly growing elderly population and more adults embracing technology, distracted driving is also increasing in prevalence within that population—particularly cell phone usage behind the wheel. Another cause of accidents is drowsiness during driving.

OBJECTIVES

The main objective of the proposed system is to detect drowsiness in drivers and alert them on time to avoid occurrence of accidents. In addition, activities such as usage of phone, turning around, picking something from rear seat during driving can lead to accidents. Detection of such activities on time can help in reducing accidents to an extent. To overcome this issue, we propose a distraction detection system that has the potential to be implemented in real vehicles. The proposed work focuses on driver distraction activities detection via images using different kinds of machine learning techniques. The input of our model is videos of driver taken in the car.

TOOLS / PLATFORM, HARDWARE AND SOFTWARE REQUIREMENT

Hardware Requirements

- Input Device   : Mouse, Keyboard

- Output Device   : Monitor

- Memory   : 4 Gb Ram (Minimum)

- Processor   : Intel core i3 or above

Software Requirements

- Operating System   : Windows 8 /10for Better Performance

- Front End   : Python (Flask)

- Back End   : Mysql

- Software Used   : Pycharm

- Web Browser   : Internet Explorer/Google Chrome/Firefox (for web application)

PROBLEM DEFINITION AND INITIAL REQUIREMENTS

Car accident is the major cause of death in which around 1.3 million people die every year. Majority of these accidents are caused because of the drowsiness of driver. The countless number of people drives for long distance every day and night on the highway may lead to an accident. To prevent such accidents, we propose a system which alerts the driver if the driver gets drowsy. Facial detection is used with help of image processing of images of the face captured using the camera. Even though security systems for passenger safety are provided by major motor companies, there exists no system that can detect the driver distraction completely. These security systems are partial, such as collision detection systems, speed sensing door lock, impact sensing door unlock etc. These cannot be used to identify the distractions faced by the driver.

BASIC FUNCTIONALITIES OF THE PROJECT

The basic functionalities of the project are as follows:

- Driver gets alert about nearby road disruptions such as potholes or gutter.

- Driver is notified when he receives new messages from his partners.

- Messages are read out using Google's Text To Speech engine which is built-in feature in smart phones.

- The android application captures images from video captured using phone camera. These images are processed to find eye regions, and to detect whether eyes are open or not. If the eyes are closed for more than a set threshold, a beep sound is played to alert driver and wake him up.

- Similarly, the camera can identify the drivers pose changes to detect whether he / she is distracted from driving, by some activities. If distractions are found, the application alerts the driver to focus on driving.

- Drive now text later implements safety feature while taking phone when driving

PROPOSED SYSTEM

The proposed system is divided into three parts,
1. Driver App

2. Partner App

3. Website for synchronising both app

4. Camera based driver vigilance control

Functions of Driver App
1. Registration

2. Login

3. Partner Setting

4. Auto messaging to own contacts

5. Location Sharing

6. Driving pattern detection using mobile sensors

7. Voice assistance support

8. Camera assistance while closing eye lids(sleeping)

9. Get road condition notifications using GPS, accelerometer

Functions Of partner app
1. Login

2. View drivers (partners)

3. Driver phone mode settings

      a. Speed based

      b. Vehicle angle based

Main settings are,
1. Call blocking

2. Screen light intensity setting

3. Screen lock while speed increases

4. Auto smsing service

5. Ring mode settings

6. View Driving logs

7. Messaging to partner

8. View Locations

Functions of Website:
1. Controls and manage the data flow between partner and driver