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A Review Paper on an Approach to Track the Driver Gaze and Eyes of the Road System to Avoid the Accidents

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Abstract : Driver distraction is one of the main causes of Accidents. In our countries observing the driver's expression of movement contributes the basis of an automobiles safety systems which help to reduce the accidents .the aim of this system is to prevent or track the Drowsiness, Image Acquisition, facial feature attraction . so by using of SIFT Algorithm .It decrease the accidents.In standardization to achieve the better sharpness in face tracking we proposed the new method which is combination of tracking and detection system has following methods or techniques ;image acquisition, facial feature detection and tracking and gaze estimation, EOR system based and this system is worked in real time i.e. during day and night. The performance of the system in a real car in environment practically we perform under a large variety of facial expression and individual. This system is does not requires manual and its work in real time i.e during day and night.

Keywords: Digital image processing, Driver distraction, Eye off the road system, Monitoring the driver gaze tracking.

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I. INTRODUCTION

In over day to day life most people are death in a accidents because of traffic and road accidents or by driver inattention in every hour. NHTSA is an agency executive branch of U.S government, part of department of transportation.It describes the mission as save lives,prevent the injuries' and reduce the vehicle related chrases.Driver distracting due to drowsiness, yawning and fatigue, talking with passengers. Annually20% of all accidents are caused by fatigue and distraction according to this there is huge need to build a system monitoring the drivers and measuring their level of attention.[1] The goal of such system is to increases the vehicle with employing new technology and also decreasing dangerous situation that might happen for passengers and vehicles as a result it become necessary to implement any system which helps to detect the distraction of the driver and avoid the accidents to save country .Day by day traffic is increasing and it cause more problem to the society .This leads to develop a system which provides the safety driving .monitoring driver activities that can provides safety system which can reduce the no.of accidents.distracted drivingas may be defined as "any activities that could be divert a person's attention away from driving". And it poses a very real treat to motorist, pedestrians anyone else sharing the road.

Fig. Driving and Texting

In above figure we see that one person is driving the car and he was message on mobile .texting and generally cellphone uses is typically highest ranking from of distraction. [10] However there are other,equally dangerous activities that take place behind the wheel all the time. Here is some common cause of driver distraction. This type distraction includes.

- Using cell phone or smartphone
- Eating and drinking
- Sickness,tiredness and micro sleep states
- Talking with passengers
- Reading,including maps
- Watching video, adjusting radio, CD player .

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II. LITERATURE SURVEY

The purpose of this literature givesan overview of studies the date to moderate the danger of distracted driving. The care of distracted driving can be tied to research carry by brays et al as head pose and gaze estimation are combination of software and hardware approach on the drawback .The scope of paper to review all existing system, still we provide description of most relevant work [6].Lee et al prefer an algorithm for yawn and pitch estimation based on arrange scatter diagram of horizontal and vertical point projection combine with face model and support vector machine(SVM) classify for gaze estimation. Chutorian et al [9] prefer an algorithm for localized gradient orientation (LGO) histogram combination with SVR- support vector regression. The algorithm was introduced a head tracking built on 3D motion estimation of the driver head. Recently rezaei and kettle [7] introduced a new algorithm for disreacting a person detection using an improved the 3D pose estimation and Fermat point transport. All this related approaches reported to work in actual time.Real time nonintrusive monitoring and prediction of driver fatigue [8] Qing Ji, X yang and peilinlan introduced the paper on real time protype driver fatigue monitoring.it charge couple device camera active infared illuminator. This camera is located for vedio images of a driver. This viewed employed the characterized eyelid movement, gaze movement and facial expression. In This paper necessary hardware and imaging algorithm are develop to multiple visual cues that typically characterized a person level fatigue.

III. SYSTEM DESCRIPTION

A. Image acquisition

The image acquisition is real time method which capture the real images by the camera this camera as low cost.it placed on the steering wheel because it helps to catch the driver gaze angle to suitable to place on the driver of a vehicle [3].During the night time use the IR illuminator for provide a clear imagesof the person who is driving the car .Image acquisition is process with help of using sift algorithm.

B. Facial feature detection and tracking

facial feature detection and tracking are important in many computer vision application you will develop a simple face tracking system by dividing in three part detect a face, identify the facial feature to track ,track the face.by default detector is configured to detect the face but it can be used other type of object. [2]The study of behavior have used in facial expression. Facial feature detecting to avoid the accidents. Facial feature tracking sleepiness of driver, facial movement etc.
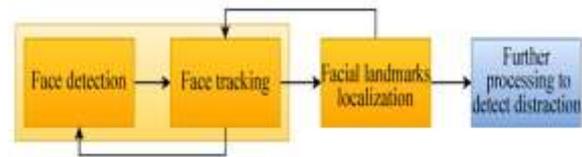

Fig 2. Face detection and tracking

C. Gaze estimation

The car driver gaze direction offers vital data as to whether the driver is diverted or not. Gaze estimation as remained long standup difficult in mainframe visualization [5].greatest standing work follows a model-based method to gaze estimation that assumes a 3d eye model, where the midpoint of eye is the origin of gaze beam.in this paper, we used a related model original eye ball is round and thus the eye focus is fixed a point comparative to the head model.Second all the eye point, with pupil,are detected using the SDM tracker define in the previous section. By SIFT descriptor for detecting the pupil of person Hough transformation is used for the purpose of extreme precision and last statement open eye and 3D position of pupil. After obtaining the 3D location pupil we can estimate gaze direction.

IV. CONCLUSION

In this paper study that by using digital image processing software which detention the descriptions are keep with the image acquisition technique after facial feature identified and traced with the help of algorithm and attention of the open eye detection conferring to all above method findoutcome whether the person is distracted or not output is nothing but alertness to avoid the accidents.

V. ACKNOWLEDGEMENT

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