" DRIVER DROWSINESS DETECTION USING PYTHON"

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ABSTRACT

Drivers often feel very drowsy while continuously driving for long distances without taking breaks. Drowsiness is a major factor in increasing the chances for a vehicle to meet accidents According to various studies, Number of accidents caused by drowsiness is much higher than the number of accidents caused by drunk driving.

The number of accidents caused by drowsiness can be reduced by having a proper system that can detect drowsiness, alert the driver and prevent major injuries.

It needs a proper system that will alert drivers to prevent major injuries.

The project starts an alarm when it detects the driver is drowsy and notify drivers to take a rest along with a nearby rest services area. It detects the driver's last sleeping time and suggests to take a rest.

Keyword : - *drowsiness, alarm, injuries.*

1. INTRODUCTION

The increasing number of traffic accidents due to a driver's diminished vigiliance level has become a serious problem for society.Some of these accidents are the result of the driver's medical condition. However, a majority of these accidents are related to driver's fatigue, drowsiness of drivers. Car accidents associated with driver fatigue are more likely to be serious, leading to serious injuries and deaths.

Fletcher et al. in has mentioned that 30% of all traffic accidents have been caused by drowsiness. It was demonstrated that driving performance deteriorates with increased drowsiness with resulting crashes constituting more than 20% of all vehicle accidents. One can use a number of diffrent techniques for analyzing driver's drowsiness.

In the computer vision techniques, facial expression of the driver like eyes blinking and head movements are generally used by the researcher to detect driver drowsiness.

1.1 OBJECTIVES
a.The main aim of this is to develop a drowsiness detection system by monitoring the eyes.
b.It is believed as the symptoms of driver fatigue can be detected early enough to avoid a car accident.
c. Detection of the fatigue involves the observation of the eye movements an d the blink patterns.

2. LITREATURE SURVEY

2.1 SYSTEM REVIEW

This survey is done to comprehend the need and prerequisite of the general population, and to do so such, we went through different sites and applications and looked for the fundamental data. Based on these data, we made an audit that helped us get new thoughts and make different arrangements for our task. We reached the decision that there is a need of such application and felt there is a need of such application and felt that there is a decent extent of progress in this field too.

2.2 PYTHON

Python is an interpreted, high-level, general-purpose programming language. Python's design philosophy emphasizes code readability with its notable use of significant whitespace. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small and large- scale projects. Python is dynamically typed AND supports multiplied programming paradigms, including procedural , object- oriented, and functional programming.

2.3 JUPYTER LAB

Project Jupyter is a nonprofit organization created to develop open-source software ,open-standards, and service for interactive computing over dozens of programming languages.

2.4 IMAGE PROCESSING

In computer science , digital image processing is the use of computer algorithms to perform image processing on digital images.

2.5 MACHINE LEARNING

Study of algorithms and statistical models that computer system use in order to perform a specific task effectively without using explicit instructions, relying on patterns and inference instead. It is seen as subset of artificial intelligence. Machine learning algorithm build a mathematical model based on sample data ,known as 'training data', in order to make predictions or decisions without being explicitly told.

3. PROJECT REQUIREMENT :

3.1 REQUIREMENTS
1. Hardware Required
- PC
- Webcam

2.Software Requirements
- Pycharm
- Open CV Face Eye Detection
- Keras -To build Classification Model
- Tensor Flow- Keras uses Tensor Flow as Backend
- Pygame- to play alarm sound

4. CONCLUSIONS

It completely meets the objectives and requirements of the system. The framework has achieved an unfaltering state where all the bugs have been disposed of. The framework cognizant clients who are familiar with the

framework and comprehend it's focal points and the fact that it takes care of the issue of stressing out for individuals having fatigue-related issues to inform them about the drowsiness level while driving.

5.ACKNOWLEDGEMENT

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