A Thesis/Project/Dissertation

Report on

Driver Drowsiness Detection System with OpenCV and Keras

Submitted in partial fulfillment of the requirement for the award of the degree of

Bachelor of Technology(Computer Science)

(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

Under The Supervision of
Dr. Arvind Dagur
Professor

Submitted By

S.No	Enrollment Number	Admission Number	Student Name	Degree / Branch	Sem
01	19021011250	19SCSE1010041	Kaushal Pandey	B.tech/CSE	8th

SCHOOL OF COMPUTING SCIENCE AND ENGINEERING DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING / DEPARTMENT OF COMPUTERAPPLICATION

GALGOTIAS UNIVERSITY, GREATER NOIDA INDIA

05, 2023

SCHOOL OF COMPUTING SCIENCE AND ENGINEERING GALGOTIAS UNIVERSITY, GREATER NOIDA

CANDIDATE'S DECLARATION

I(Kaushal Pandey), hereby certify that the work which is being presented in the thesis/project/dissertation, entitled " **Driver Drowsiness Detection System With OpenCV and Keras"** in partial fulfillment of the requirements for the award of the B.Tech submitted in the School of Computing Science and Engineeringof Galgotias University, Greater Noida, is an original work carried out during the period of month, Year to Month and Year, under the supervision of **Dr. Arvind Dagur** Designation, Prof. Department of Computer Science and Engineering/Computer Application and Information and Science, of School of Computing Science and Engineering , Galgotias University, Greater Noida

The matter presented in the thesis/project/dissertation has not been submitted by us for the award of any other degree of this or any other places.

Kaushal Pandey

,19SCSE1010041

This is to certify that the above statement made by the candidates is correct to the best of my

knowledge.

Supervisor Name

Dr. Arvind Dagur

Designation (Professor)

CERTIFICATE

The Final Thesis/Project/ Dissertation Viva-Voce examination of Kaushal Pandey been held on 15/05/2023 and his/her work is recommended for the award of B.Tech .

Signature of Examiner(s) **Signature of Supervisor(s)**

Signature of Project Coordinator **Signature of Dean**

Date: 15/05/2023

Place: Greater Noida

Table of Contents:

Acronyms

B.Tech.	Bachelor of Technology
M.Tech.	Master of Technology
BCA	Bachelor of Computer Applications
MCA	Master of Computer Applications
B.Sc. (CS)	Bachelor of Science in Computer Science
M.Sc. (CS)	Master of Science in Computer Science
SCSE	School of Computing Science and Engineering

List of Tables

List of Figures

Abstract :

Drowsiness and Fatigue of driver's square measure amongst the many causes of road accidents. Every year, the amounts of deaths increases and fatalities injuries globally. During this paper, a module for Advanced Driver help System (ADAS) is given to cut back the quantity of accidents because of driver's fatigue and thus increase the transportation safety; this technique deals with automatic driver somnolence detection supported visual info and computing. we tend to propose associate degree algorithmic program to find, track, and analyze each the drivers face and eyes to live PERCLOS, a scientifically supported live of somnolence related to slow eye closure. However, the development of such systems encounters many difficulties related to fast and proper recognition of a driver's fatigue symptoms. One of the technical possibilities to implement driver drowsiness detection systems is to use the visionbased approach. This article presents the currently used driver drowsiness detection systems. The technical aspects of using the vision system to detect a driver drowsiness are also discussed. The parameters of the eyes and mouth detection are created within the face image. The video were change into images frames per second. From there, locating the eyes and mouth can be performed. Once the eyes are located, measuring the intensity changes in the eye area determine the eyes are open or closed. If the eyes are found closed for 4 consecutive frames, it is confirm.

INTRODUCTION:

Because of inadequate sleep, prolonged nonstop driving, or any other medical condition, such as brain disorders, etc., the driver's ability to pay attention suffers. Numerous studies on traffic accidents indicate that driver tiredness contributes to about 30% of accidents. When a driver drives for longer than is customary for them, they become excessively tired and frazzled, which might make them fall asleep or lose their memory. Drowsiness is a complicated miracle that indicates a decline in the driver's cautions and aware states. Although there isn't a direct way to combat sleepiness, there are a number of additional indirect methods that may be applied instead. We will create a system for sleepiness detection using this Python project. The route is heavily travelled both during the day and at night. Long-distance travellers, bus and truck drivers, and taxi drivers all experience sleep deprivation. As a result, it is extremely risky to drive while tired. The majority of collisions are caused by drowsy driving. We will thus create a system using Python, OpenCV, and Keras that will warn the driver when he gets tired in order to prevent these incidents.

1.2 Formulation Of Problem

Current systems for detecting intoxication, such as Electroencephalography (EEG) and Electrocardiography (ECG), which separately measure heart rate and brain activity, require complicated calculations and pricey clothing that is uncomfortable to wear while driving and isn't appropriate for road conditions. The physical signals that indicate sleepiness must first be connected in order to create a reliable and effective drowsiness detection algorithm, but a system that employs a camera in front of the driver is more suited for usage. Issues arise while examining the area around the eyes and lips because of the brightness of the lighting and when the driver tilts their head to the left or right. Therefore, the purpose of this design is to analyse all previous research and fashions and to give a technique for identifying.

1.2.1 Tools and Technology Used

OpenCV - Known as the Swiss Army Knife of computer vision, OpenCV is an open-source computer vision programme. It includes a large selection of modules that can assist us with a number of computer vision issues. The multipurpose tool of computer vision is called OpenCV (Opensource Computer Vision). It offers a broad variety of modules that can assist us with many computer vision issues..

Tensorflow - This artificial intelligence and machine learning software library is free and open-source. It may be used to many other tasks, although it focuses mostly on deep neural network training and inference.

Keras is an open-source software package that gives artificial neural networks a Python interface. The TensorFlow library interface is provided by Keras.

Python - In 1989, Guido Rossum developed the objectoriented programming language Python. It is perfectly suited for the quick prototyping of sophisticated applications. It is extendable to C or C++ and offers interfaces for numerous operating system functions and libraries.   A cross-platform collection of Python modules called Pygame is made specifically for creating video games. It provides music and graphics libraries created specifically for use with the Python programming language.

CHAPTER 2 Literature Survey

2.1

We came to the conclusion that there will be many techniques to sleepiness discovery after Fuletra and Dulari Bosamiya floated some of them. Depending on the situation, applicable. Although EEG- grounded data are useful, wearing electrodes while driving is impractical. Although the strategy based on artificial neural networks is simple, neurons are the greatest choice if we want a superior outcome. Image processing is one of the most often used tactics among experimenters. In their article, Vahid Kazemi and Sullivan Josephine discussed the 300 Faces in the Wild challenge, which aims to investigate various datasets of photos for the detection of facial milestones. By teaching their computer with several facial landmarks, Tereza Soukupova and Jan Cech in their study used the facial landmark finding to detect eye blinks in real time.   There are more business accident lawsuits in India than ever before. involving buses and regular exchanges of heavier vehicles including motorcars, lorries, and trucks. Dozing off and being exhausted are two of the main factors that contribute to workplace accidents. Being in this condition while driving might have devastating results since it clouds the driver's judgement and attention. If drivers take precautions like getting adequate sleep before driving, drinking coffee, or stopping for a break if sleepy, they can prevent falling asleep at the wheel. However, drivers consistently refuse to adopt one of these behaviours and keep on driving when they are concerned that they are fatigued. Therefore, one of the ways to prevent traffic accidents is to identify drowsiness. This concept suggested that yawning

2.2 Approach/Project Design

However, in order to develop a sleepiness detection algorithm that is trustworthy and accurate, the physical indications that will indicate tiredness need to be found first. A drowsiness detection system that uses a camera situated in front of the driver is more suited for usage. The difficulties arise when detecting the eyes and mouth region due to lighting intensity and when the driver tilts their face to the left or right.

2.1.

Drowsiness and Fatigue According to Antoine Picot et al. [2], drowsiness is the state in which a person is between being awake and being asleep. Due to this circumstance, the motorist finds it difficult to concentrate on driving. As a result of the driver's semi-consciousness, the car can no longer be controlled. Mental weariness is a contributing factor to sleepiness, according to Gianluca Borghini et al. [3], and it makes it difficult for the individual experiencing it to perform since it reduces the brain's capacity to react to unexpected occurrences.

2.2. Electroencephalography (EEG)

for Detecting Drowsiness The technique of electroencephalography (EEG) is used to gauge electrical activity in the brain. It may be used to monitor the heartbeat, eye blinks, and even significant bodily movements like head movements, as demonstrated in Figure 3. It may be used to measure brain activity in both human and animal subjects. To detect any electrical brain activity, it makes use of specialised gear that positions sensors all around the top of the head. Examples of EEG Data Collection . According to authors in [4], the EEG approach is the best to be used for sleepiness and tiredness detection based on the way that has been developed by the previous researcher to identify drowsiness indications. The EEG technique uses four different frequency kinds. An increase in power in the alpha () and delta () frequency regions indicates that the driver is experiencing weariness and sleepiness [4]. This approach has certain drawbacks, including a high sensitivity to background noise near the sensors. The environment must be entirely quiet when the subject is conducting an EEG experiment, for instance. The sensors that measure brain activity will be hampered by the noise. This approach also has the drawback of not being appropriate for use in real driving situations, even though the results may be correct [10]. Imagine someone wearing something on their head that is loaded with wires while they are driving. If the driver turns their head, the wires may come off from their position. Even. Face detection technology for drowsiness detection Face area detection [5, [6], and [14] can be used to identify drowsiness. Drowsiness signs are more obvious and easy to spot in the facial area, hence different techniques are used to identify it there. The position of the eyes may be determined from the facial region. According to the author in [5], there are four different forms of eyelid movement that can be utilised to identify tiredness. They are entirely open, entirely closed, and in the centre, when the eyes alternate between being fully open and fully closed [5]. An illustration of a picture used to detect eyelid movement is shown in Figure 4. Eyes might be open, closed, processed, or CLOSE. In order to offer a way to detect tiredness using video or a webcam, this project will analyse all past research and methods. It develops a system that can analyse each frame of the movie after analysing the recorded video picture.

2.3. PERCLOS

Implementation: (Proportion of Closed Eyes) Eye blinks [5] and the percentage of eye closure (PERCLOS) can be used to measure drowsiness. [5] present a system that learns the pattern of length of eyelid closure for the purpose of detecting eye blinks. [10] states that "this proposed method measures the duration of a person's eye closure, and if they are closed longer than the average eye blink duration, it is possible that the person is falling asleep." The author said in [10] that "the average normal person eye blink" lasts around 310.3 milliseconds. The PERCLOS approach suggests measuring sleepiness. by figuring out how much of the eyelid 'droops' [11]. The software library has sets of eyes open and closed that may be used as a parameter to distinguish between eyes that are fully open and those that are totally closed. Eyelid drooping occurred over a considerably longer period of time while the person was gradually drifting off to sleep. As a result, the progression of the driver's drowsiness may be observed. Therefore, the PERCLOS approach set a proportionate value where, at 80% closure, or almost full closure, it was presumed that the driver was sleepy [2], [10], and [12]. This approach requires a fixed threshold value of eye opening for the PERCLOS method to function effectively, making it difficult to employ while driving in real-time. The issue is that the camera needs to be positioned at a precise angle in order to acquire a clear image of video without any disruption of the eyebrow and shadow that cover the pupil in both approaches to detect tiredness using eye blink pattern and PERCLOS.

2.4. Yawning Detection Method

asserts that one can tell if someone is sleepy by observing their face and behaviour. The author suggests a technique in which the position of the lips may be used to determine sleepiness, and the photos are processed using a cascade of classifiers for faces developed by Viola-Jones. The photos and the collection of image data for the mouth and yawning were compared [15]. While yawning, some people would cover their mouth with their hand. Getting decent pictures is difficult if a subject is yawning while covering their mouth, yet yawning is unquestionably an indication of exhaustion and sleepiness.the examples in Figure 5 It is challenging to use this method while driving in real-time since the PERCLOS method requires a preset threshold value of eye opening to work properly. The problem is that in both methods to detect fatigue using eye blink pattern and PERCLOS, the camera has to be positioned at a specific angle in order to collect a good image of video without any disturbance of the eyebrow and shadow that cover the pupil. yawning detection technique employed in the [15] study. This study suggested using an eye and yawning detection approach after reading through the research articles and current techniques. Eye blink length provides the information that the longer a person closes their eyes, the more sleepy they will be seen to be. It happens when tired people's eyelids stay closed for longer than they would normally blink. In addition, yawning is a common human reaction when it indicates tiredness or exhaustion. It is one of the signs of drowsiness.

CHAPTER 3 METHODOLOGY

This chapter will go through the approach used to accomplish the project's goals and take a deeper look at how it is put into practise. In order to finish this project, it will be necessary to analyse each stage. Every decision made and outcome of the technique put into practise for this project will be discussed for each stage up to the project's completion. In order to complete this project, MATLAB® Computer Vision System will be used. The techniques employed are already available MATLAB® commands to identify the face, eyes, and mouth regions.

3.1. Research Techniques

Research methodology often refers to a set of steps that will be taken to conduct a certain research. There are certain procedures and actions that need to be planned and followed continuously in order to accomplish this project methodically within the allotted time. 11 3.2. Flow Diagram Figure 6: Project Progress Flow Chart 3.2.1. Study Background To guarantee that the author is aware of the purpose of the project, fundamental knowledge of the associated issue is necessary before beginning any study or projects. The author's understanding of the relationship between sleepiness and weariness at this point is aided by the author's academic background. It also aids the author in comprehending the gravity of operating a motorised vehicle while intoxicated. It has been established that driving when fatigued or drowsy increases the risk of an accident.

3.2.2. Literature Review

This step involves reviewing earlier research that was done on the author's project. This article examines the connection between being sleepy and operating a motorised vehicle. The current sleepiness detection technique was carefully observed. Previous studies have employed a variety of criteria. The project's scope is narrowed by concentrating on the characteristics for recognising mouth and eyes

3.2.3

Earlier Information Collection and Analysis In this stage, it was discovered that using an algorithm is one of the best ways to identify eyes and yawning. To aid in the project's development, certain recent algorithms that are relevant to it are studied. When a person's eyes are closed for a period of time longer than a regular eye blink, as shown in [10], it may indicate that the individual is about to nod off. According to studies on human eye blinks, the typical human blink lasts around 202.24 milliseconds, whereas a sleepy person's blink lasts about 258.57 milliseconds. Authors receive the video of the MIROS experiment where participants are driving in a simulated environment and being filmed for the duration of the session after determining the methodology to be utilised in this project. The experiment requires between 60 and 90 minutes to complete. The analysis of sleepiness detection is performed manually by watching the entire movie and noting any instances of tiredness. The parameters of the data include the occurrence of yawning, sleepiness, and other symptoms at the beginning and finish times. This is done in order to determine how long the indications were there.

3.2.4. Design and development of algorithms

The method of identifying a face, eyes, and mouth has included a number of algorithms and techniques. The method and algorithm employed is called Cascade Object Detector. The Viola-Jones method is used by the Cascade Object Detector to identify human faces, mouths, eyes, noses, and upper bodies.

Viola-Jones Face Detection Algorithm

A number of object classes may be detected using the Viola-Jones object detection framework, however it is primarily focused on detecting faces and facial characteristics. The idea of rectangle features, which comprises the sums of pixels inside the rectangular sections, is used in this technique. The sums of the pixels in the white and grey rectangles in Figure 8 are deducted from the sum of the pixels in the white and grey rectanglesThe difference between the total of the pixels in the two rectangular sections, A and B, represents the value of a two- rectangle feature. The areas are identical in size and form. Additionally, they are aligned either horizontally or vertically and close to one another. A threerectangle feature, denoted as C, calculates the total of two external rectangles less the sum of an inside rectangle. The difference between diagonal pairs of rectangles is computed by a fourrectangle feature, denoted as D. The value of the integral image at location (x, y) is equal to the sum of all the pixels above and to the left. On the basis of the integral image, four array references may be used to determine the total number of pixels inside rectangle D. The value of the integral image at position 1 is equal to the sum of the pixels in rectangle A. The values at positions 2, 3, and 4 are A + B, A + C, and A + B + C + D, respectively. The traits that were picked for the face detection task in order to find the face are shown in Figure 10. The two traits are shown in the top row, overlaid on a typical training face in the pictureThe intensity difference between the area around the eyes and a region across the upper cheekbones is measured by the first characteristic. This is due to the fact that the area around the eyes is frequently darker than the area around the nose and upper cheekbones. The second characteristic compares the intensities across the nasal bridge to those around the eyes.

3.2.5. Analysis and Testing

The facial area must be identified initially before the eye and mouth regions may be located. The system's performance and speed will suffer as a result of this step's broad region of detection. The project's goal is to identify the sleepiness indicators, which include the lips and eyes. As a result, this experiment restricted the detection to the eye and mouth. The system's performance will improve as a result. In order to determine the detection area for the system that will be developed, the Cascade Object Detector algorithm is being evaluated using the MATLAB® programme. To make sure it meets the necessary requirements, testing is necessary.

CHAPTER 4 RESULT AND DISCUSSION

4.1. Final Year Project

II Development The results of the final year project will be discussed in this chapter. In addition, this chapter examines the data pertaining to the simulation of the method. In this chapter, the procedures for identifying eyes and mouth will also be covered. 4.2. Experimentation Result It was originally planned to utilise MATLAB® to create the system's algorithm for this senior project. Working on the system's coding will take place over the remaining days of FYP 1 and during FYP 2. The software's toolboxes for MATLAB® have been utilised to make authoring programmes easier. The experiment's findings include the detection of a face, eyes, and lips. 4.2.1. Detecting Face The author uses the Vision Cascade Detector method from the Computer Vision Toolbox System to find faces. It develops a system object detector that use the Viola-Jones approach to find objects. The detector is set up by default to look for faces. The command script and the outcome of the face detection method are displayed shows the face detection outcome. The following features are used to determine the facial area: 1. Using the constructor, define and configure the cascade object detector. To identify faces, noses, eyes, mouths, and upper bodies, the constructor employs an internal Viola-Jones algorithm. 2. Play the video or selected image while the face detector is running. 3. Trace the identified face's perimeter using the bounding box. The enclosing circle is necessary. Figure 16 shows the command from the MATLAB® editor. Command from MATLAB® Editor.

4.2.2. Detecting Eyes

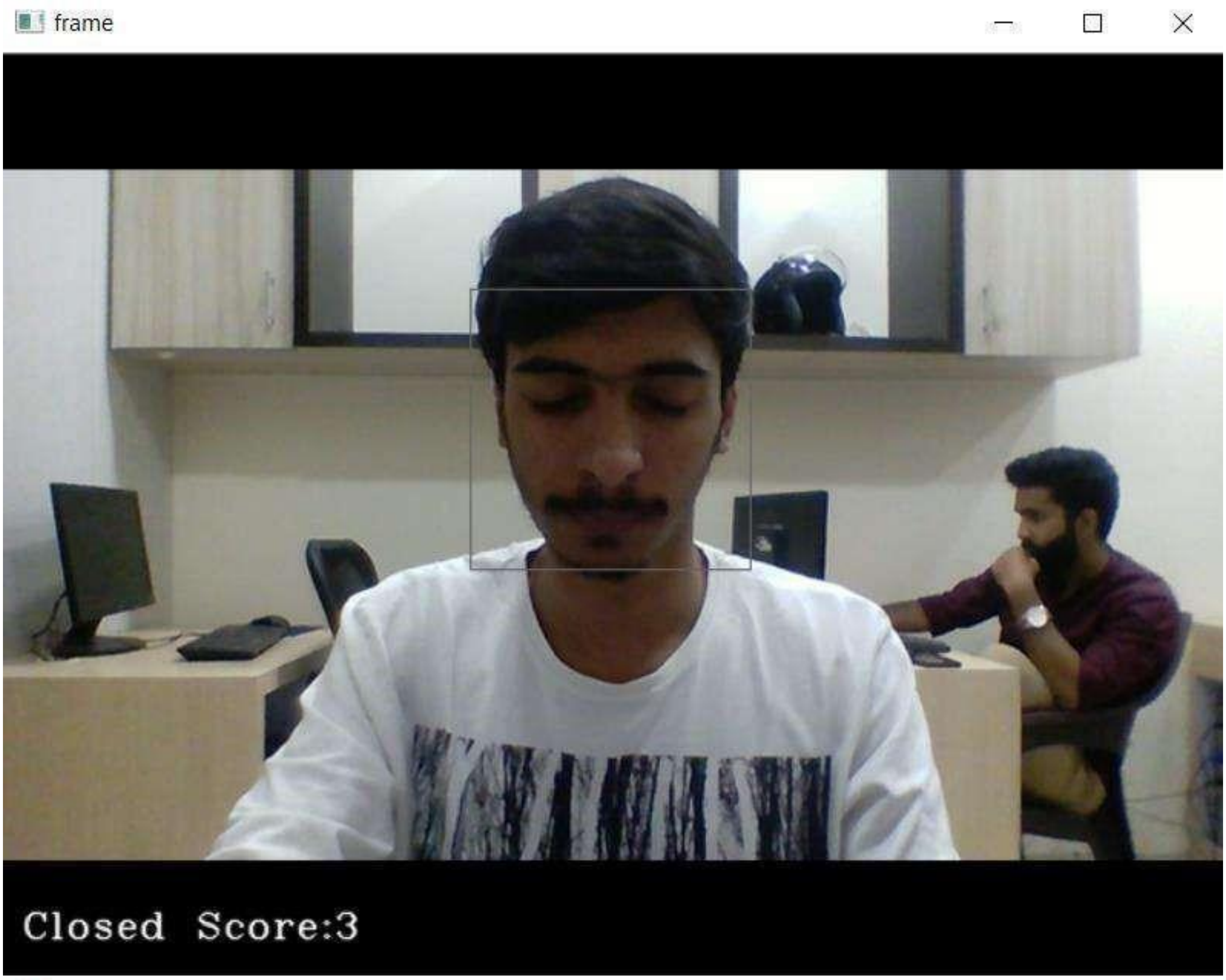
Because it is still possible to detect drivers who angle their faces, the eyes must be recognised individually. The author employs the same technique as for face detection, but here it is modified to look for eyes in an object. The instruction from the MATLAB® editor is seen in Figure 17. Figure 18 displays the eye detection algorithm's output as a result. A difficulty arises when the author uses multiple films; other elements in the movie are mistakenly identified as eyeballs. It is considered a true positive if the detected region is in the ocular area. However, other portions of the film were identified throughout the trial as eyeballs far from the eye area, which is referred to as a False Positive. False Positives are results that are incorrectly positive in circumstances when they should be negative. The outcomes of a false-positive test utilising another video are displayed.

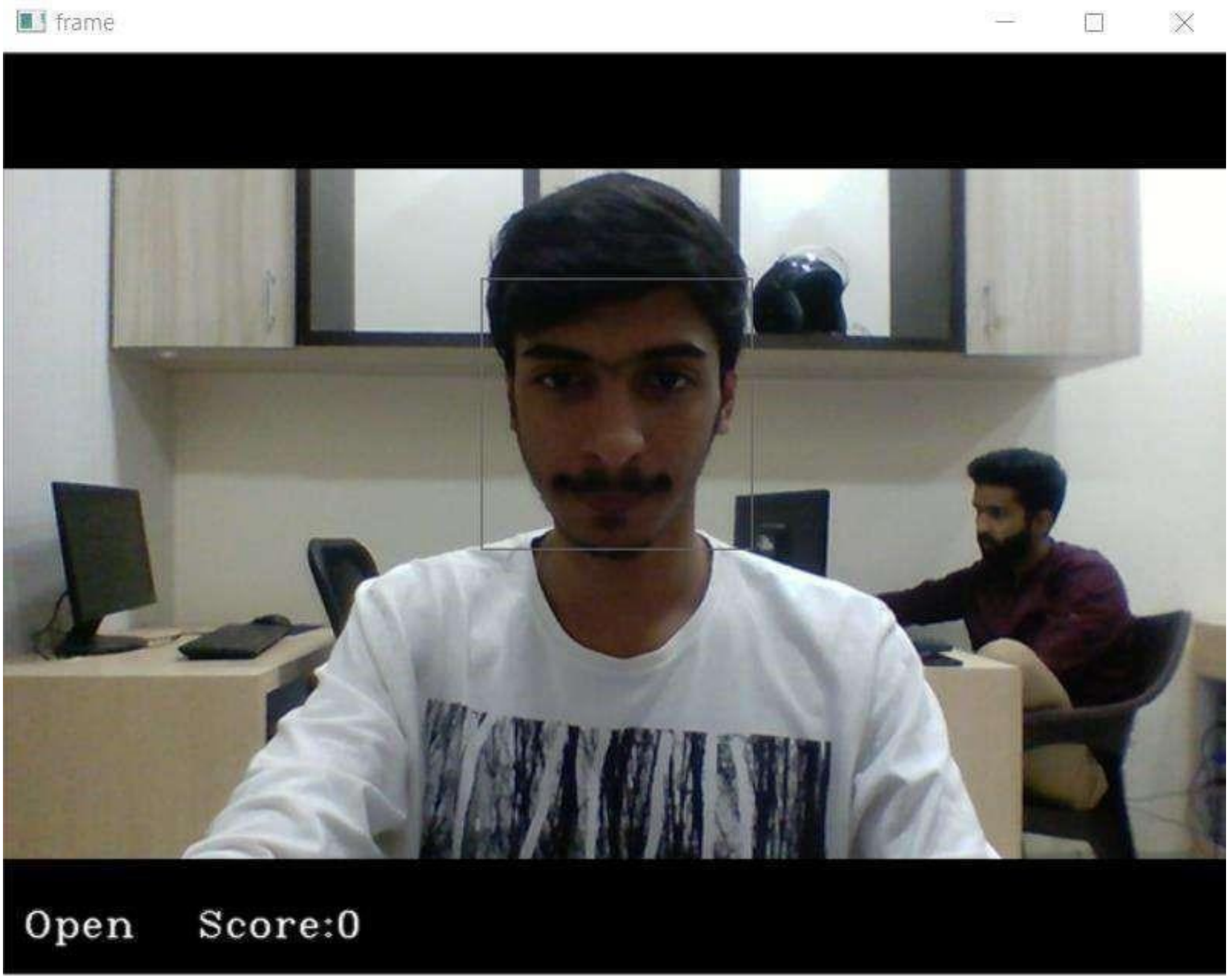
4.3.3. Creating Detectors

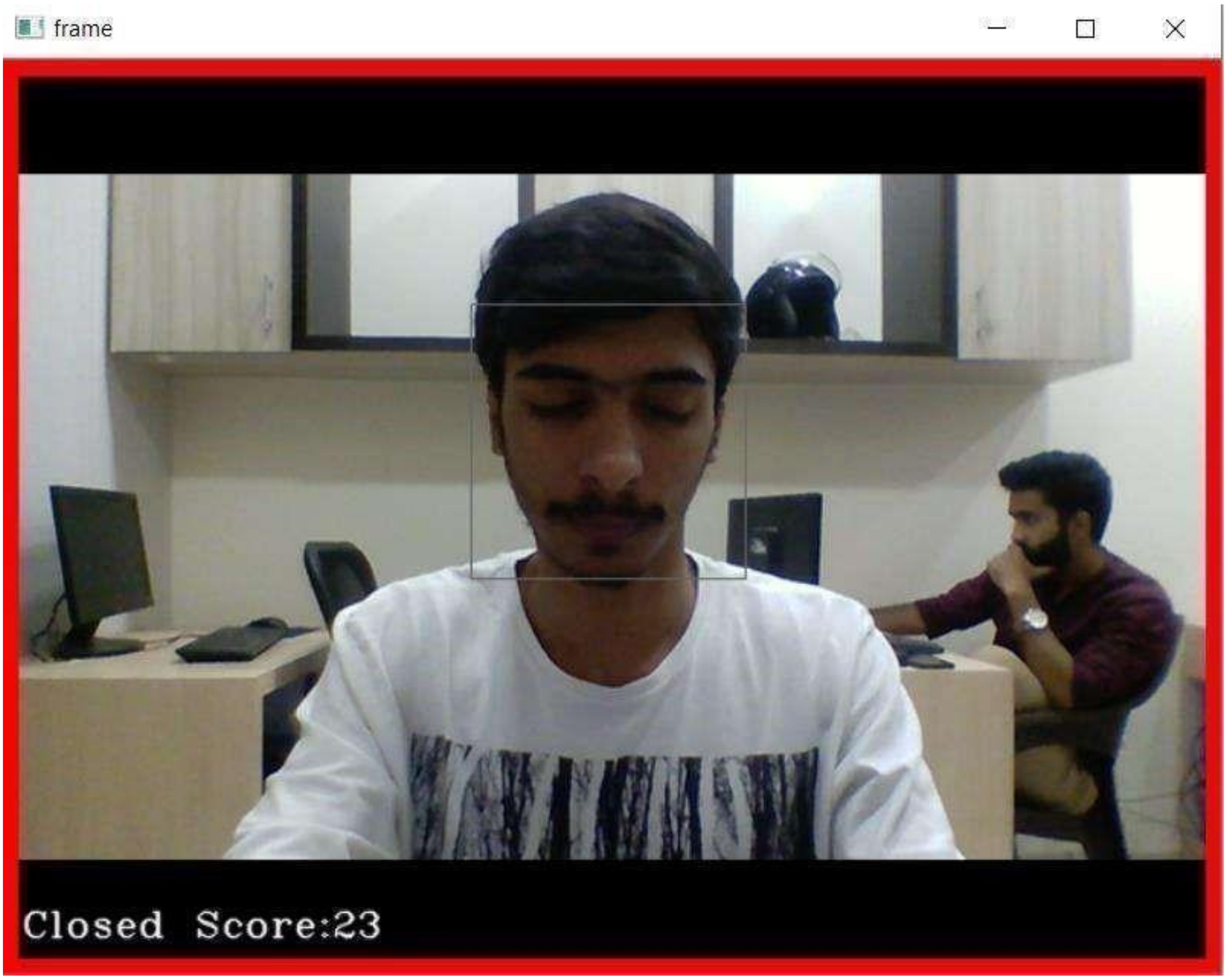
All of the cascade detectors for the face, each eye, and each mouth were developed in the first part. It's because the other detectors feature was connected to the complete algorithm. The detectors algorithm is displayed.

4.2.4. Eye Feature Extraction

After obtaining the bounding boxes for each eye, the brightness variation issue is fixed by using a histogram equalisation filter. Each grayscale picture, where each pixel's value is a single sample, solely conveys information about the intensity, with black being the weakest intensity and white the brightest. The wavelength-weighted power emitted by a light source per unit solid angle is measured as luminance intensity. A method for altering picture intensities to improve contrast is histogram equalisation. It appears that the characteristics are closely connected to eye closure. It is hypothesised that the degree of gradient in the ocular picture is inversely correlated with the degree of eye opening. For instance, the amount of gradient may be greater when the subject's eyes are open than when they are closed. Here, a detection of cumulative amount over time will let us know if the eye is opening or shutting. The technique used to produce histogram equalisation is shown.


frame
Closed Score:3


frame
Open Score:0



Source Code

```
import cv2 import os from keras.models
import load_model import numpy as np
from pygame import mixer import time
mixer.init() sound =
mixer.Sound('alarm.wav') face =
cv2.CascadeClassifier('haar cascade
files\haarcascade_frontalface_alt.xml')
leye = cv2.CascadeClassifier('haar
cascade
files\haarcascade_lefteye_2splits.xml')
```

```
reye = cv2.CascadeClassifier('haar cascade
files\haarcascade_righteye_2splits.xml') lbl=['Close','Open'] model =
load_model('models/cnncat2.h5') path = os.getcwd() cap =
cv2.VideoCapture(0) font = cv2.FONT_HERSHEY_COMPLEX_SMALL count=0 score=0
thicc=2 rpred=[99] lpred=[99] while(True):  ret, frame = cap.read()
      height,width = frame.shape[:2] gray = cv2.cvtColor(frame,
cv2.COLOR_BGR2GRAY)      faces =
face.detectMultiScale(gray,minNeighbors=5,scaleFactor=1.1,minSize=(25,25))
left_eye = leye.detectMultiScale(gray)      right_eye =
reye.detectMultiScale(gray)    cv2.rectangle(frame, (0,height-50) ,
(200,height) , (0,0,0) , thickness=cv2.FILLED )   for (x,y,w,h) in faces:
cv2.rectangle(frame, (x,y) , (x+w,y+h) , (100,100,100) , 1 )   for
(x,y,w,h) in right_eye: r_eye=frame[y:y+h,x:x+w]  count=count+1 r_eye =
cv2.cvtColor(r_eye,cv2.COLOR_BGR2GRAY) r_eye = cv2.resize(r_eye,(24,24))
r_eye= r_eye/255   r_eye= r_eye.reshape(24,24,-1) r_eye =
np.expand_dims(r_eye,axis=0)   rpred = model.predict_classes(r_eye)
      if(rpred[0]==1): lbl='Open'    if(rpred[0]==0): lbl='Closed'
```

```
      break for (x,y,w,h) in left_eye: l_eye=frame[y:y+h,x:x+w]
      count=count+1      l_eye = cv2.cvtColor(l_eye,cv2.COLOR_BGR2GRAY)
      l_eye = cv2.resize(l_eye,(24,24))      l_eye= l_eye/255
l_eye=l_eye.reshape(24,24,-1)  l_eye = np.expand_dims(l_eye,axis=0) lpred =
model.predict_classes(l_eye)   if(lpred[0]==1): lbl='Open'
      if(lpred[0]==0):   lbl='Closed'      break if(rpred[0]==0 and
lpred[0]==0): score=score+1    cv2.putText(frame,"Closed",(10,height-20),
font,1,(255,255,255),1,cv2.LINE_AA)   # if(rpred[0]==1 or lpred[0]==1):
      else: score=score-1      cv2.putText(frame,"Open",(10,height-20), font,
1,(255,255,255),1,cv2.LINE_AA)        if(score<0):      score=0
cv2.putText(frame,'Score:'+str(score),(100,height-20), font,
1,(255,255,255),1,cv2.LINE_AA)       if(score>15): #person is feeling sleepy
so we beep the alarm cv2.imwrite(os.path.join(path,'image.jpg'),frame)
      try: sound.play() except: # isplaying = False pass      if(thicc<16):
            thicc= thicc+2      else:      thicc=thicc-2 if(thicc<2): thicc=2
```

CHAPTER 5: CONCLUSION AND FUTURE SCOPE :

We have created a sleepy driver alarm system in this Python project that you may use in a variety of ways. A CNN model was used to forecast the state after utilising OpenCV to recognise faces and eyes using a haar cascade classifier. According to the design of the proposed work, OpenCV is thought to be more appropriate for this application since it satisfies the necessary criteria, including cost, power, and size. This technique can quickly identify a person's face, eye, and mouth, which are then recorded using a camera. Whether the mouth and eyes were open or closed throughout the monitoring process can be determined by the technology. If the eyes are closed for a lengthy amount of time or if yawning is noticed, a warning signal will be sent.

::Software MATLAB®

R2013a is one of the tools used to construct the algorithm for the eye blink detection system. • Compatibility with several programming languages, including C, C++, and Java. Algorithms and tools are provided by Computer Vision System Toolbox for the creation and simulation of computer vision and video processing. Algorithms for feature extraction, motion detection, object tracking, and video processing are included in the system. . Noise Filter The technique for data collecting employs a median filter to remove noise and create a smooth final graph. The transition from an open eye to a closed eye is then obtained using the global parameter technique, which uses the product energy of each area. Last but not least, DoG is used to derive the global parameter. The programme detects the opening of the mouth using the same techniques. The whole sleepiness detection system's workflow is depicte.

CONCLUSION

The author has previously concentrated on creating the algorithm or command to identify sleepiness. The algorithm's creation is timeconsuming because the authors only have rudimentary knowledge of MATLAB®. By building the method alone with the aid of the Computer Vision Toolbox System that is already built-in to MATLAB® software and also by trial and error of the shared file from the MathWorks®, the author learns about the MATLAB® instructions. All of the most skilled MATLAB® users from across the world contribute their algorithmic efforts at MathWorks®. In addition, during the Final Year Project I, examining the indicators of sleepiness and gathering data. The major work scope was evident from the experiment video. It will be utilised as input parameters to create a simulation system for sleepiness detection. One of this sem’s goal is which was to analyse the video pictures of participants in MIROS's driving simulation experiment has so far been accomplished. There are several methods for creating simulation system. This project also need to accomplish certain other goals. The author began creating an algorithm to identify sleeping as a aprt of final year project. In this study, a few methods that were discovered via earlier reaseach has been used. The algorithm and methods need to be further adjusted in order to experiment.