MOOD DETECTION WITH OPENCV

Problem Statement:

Detect eyes and alert when the user is drowsy.

By using libraries like numpy,openCV,scipy giving alert to the driver when he/she is drowsy while driving

INTRODUCTION

With this intermediate-level Python project, we will be making a drowsiness detecting device. A countless number of people drive on the highway day and night. Taxi drivers, bus drivers, truck drivers and people traveling long-distance suffer from lack of sleep. Due to which it becomes very dangerous to drive when feeling sleepy.

The majority of accidents happen due to the drowsiness of the driver. So, to prevent these accidents we will build a system using Python, OpenCV, and SciPY which will alert the driver when he feels sleepy.

Principle

The system will predict the eye and mouth landmarks in order to identify if a person is falling asleep, by checking if his eyes are closed.

WORKING:

The working of this system can be divided into two parts:•

Detecting or Localizing the face.

Predicting the landmarks of eyes

Once the landmarks are predicted, we use only the eye landmarks to determine the Eye Aspect Ratio(EAR) to check if a person is drowsy.

STEPS FOR SETTING UP

- Involves setting up of camera
- Running Python code

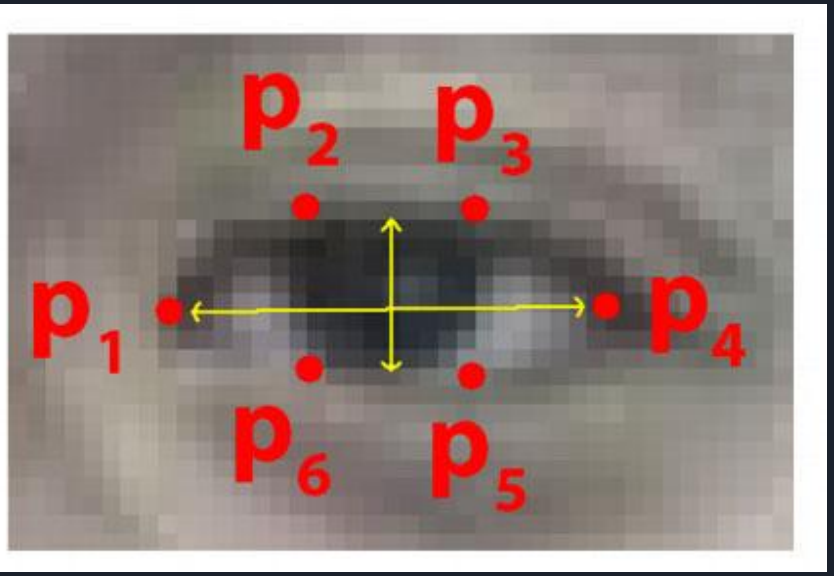
Libraries To Be Used:

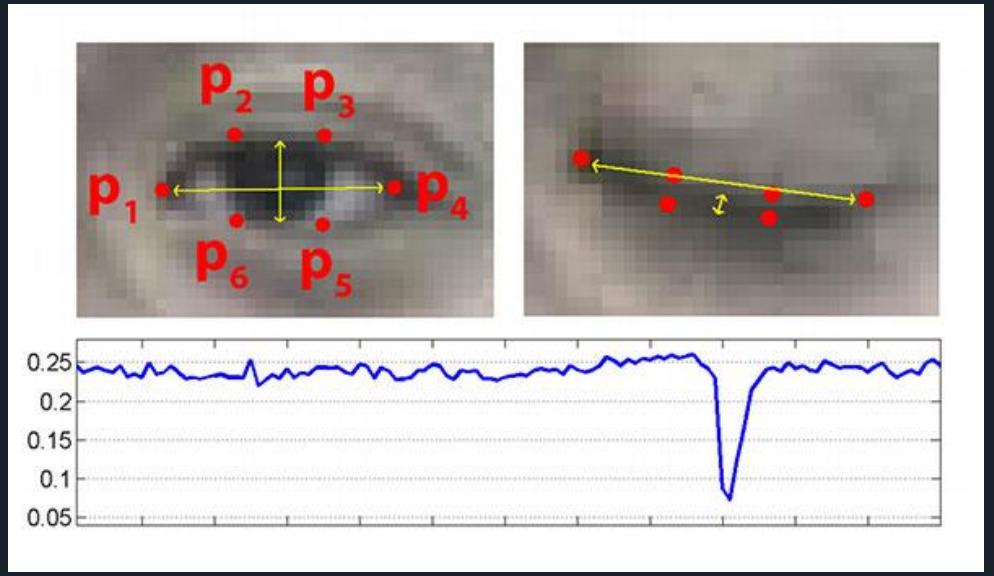
- Scipy
- openCV
- numpy
- Dlib
- Imutils

Along with libraries Thread Class to raise alarm

Condition For Alert

It checks 20 consecutive frames and if the Eye Aspect ratio is less than 0.25, Alert is generated.





$$\mathrm{EAR} = \frac{\|p_2 - p_6\| + \|p_3 - p_5\|}{2\|p_1 - p_4\|}$$

TIME LINE

Week	Work
1-2	Gathering knowledge and resources
3-7	Coding and Implementation
8	Testing and Debugging

SUMMARY

In this Python project, we look to build a drowsy driver alert system that you can implement in numerous ways. We will be using OpenCV to detect eyes,