Driver Drowsiness Detection Using OpenCV and dlib

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Introduction

Drowsy driving is the dangerous combination of driving and sleepiness or fatigue. This usually happens when a driver has not slept enough, but it can also happen due to untreated sleep disorders, medications, drinking alcohol, or shift work. Makes drivers less able to pay attention to the road. Over 100,000 deaths are caused yearly due to drivers sleeping behind the wheels

Model Used

Dlib is a modern C++ toolkit containing machine learning algorithms and tools for creating complex software in C++ to solve real world problems. It is used in both industry and academia in a wide range of domains including robotics, embedded devices, mobile phones, and large high performance computing environments

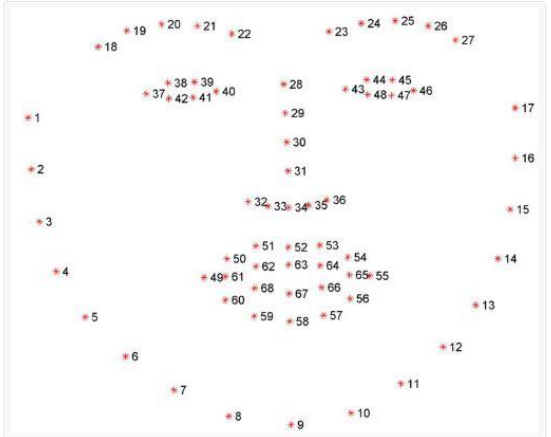
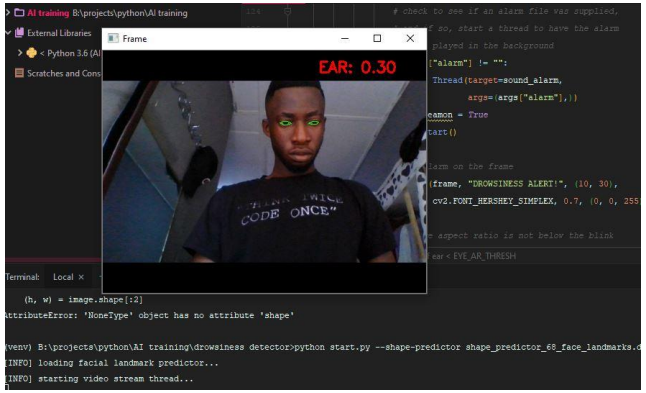


Figure 8: Visualizing the 68 facial landmark coordinates from the iBUG 300-W dataset (larger

Results



Conclusion

In conclusion, we successfully implemented a drowsiness detection algorithm which can be used to save a lot of life.

Future Works

This system is biased to people with small or sleepy eyes so for future works, we will train our model so it don't become biased. Also the model can be trained to also detect driver destruction.

References

1. Accidents caused by drowsiness in 2018, available at https://medicalxpress.com/news/2018-11-sleepy-drivers-involved-year.html on 14th September, 2019
2. Arun Sahayadhas, Kenneth Sundaraj & Murugappan Murugappan "Detecting Driver Drowsiness Based on Sensors", Sensors, 7 December 2012