

Real Time Driver Drowsiness Detection

Harshal Patil, Varsha Khandekar, Prashant Rajput, Deepak Somani, Harshal Chippa

Students, Department of Information Technology
Smt Kashibai Navale College of Engineering, Pune, Maharashtra, India

Abstract: *In recent years, driver fatigue has been one of the leading causes of road accidents around the world. One direct way to measure driver fatigue is to measure the driver's condition, i.e., drowsiness. Therefore, it is important to recognize the drowsiness of the driver to save his life. The aim of this project is to develop a prototype of a driver drowsiness detection system. This system is a real-time system that continuously records the driver's image and, according to the algorithm, measures the condition of the eye and warns the driver if necessary. Although there are many different methods of measuring driver fatigue, this approach is completely unobtrusive, does not affect the driver and provides the exact condition of the driver's eye. Distance between facial features. If the eye closure exceeds a certain level, the driver is recognized as sleepy. Several OpenCv libraries and the Dlib library are used to implement this system. The developed system is implemented by means of a camera, i.e. WebCam.*

Keywords: OpenCv, Dlib, Eye Aspect Ratio, Euclidean Distance.

REFERENCES

- [1] Manu B.N, "Facial Features Monitoring for Real Time Drowsiness Detection", 12th International Conference on Innovations in Information Technology (IIT), 2016 [Pg. 78-81]
- [2] Amna Rahman, "Real Time Drowsiness Detection using Eye Blink Monitoring", Department of Software Engineering Fatima Jinnah Women University 2015 National Software Engineering Conference (NSEC 2015)
- [3] Kusuma Kumari B.M, Prof. Ramakanth Kumar .P, "A Survey on Drowsy Driver Detection System", International Conference On Big Data Analytics and Computational Intelligence (ICBDACI), 2017
- [4] Feng You , Xiolong Li , Yunbo Gong, Haiwei Wang, Hongyi Li, "A Real-time Driving Drowsiness Detection Algorithm With Individual Differences Consideration", IEEE ACCESS, 2019
- [5] Jang Woon Baek, Byung-Gil Han, Kwang-Ju Kim, Yun-Su Chung, Soo-In Lee, "Real-time Drowsiness Detection Algorithm for Driver State Monitoring Systems", International Conference on Ubiquitous and Future Networks, 2018
- [6] Mkhuselisi Ngxande, Jules-Raymond Tapamo, Michael Burke, "Driver drowsiness detection using Behavioral measures and machine learning techniques", Pattern Recognition Association of South Africa and Robotics and Mechatronics International Conference (PRASA-RobMech) Bloemfontein, South Africa, 2017
- [7] Ashish Kumar, Rusha Patra, "Driver Drowsiness Monitoring System using Visual Behaviour and Machine Learning", IEEE Symposium on Computer Applications & Industrial Electronics (ISCAIE), 2018
- [8] Paul Viola, Michael Jones, "Rapid Object Detection using a Boosted Cascade of Simple Features", Accepted Conference on Computer Vision and Pattern Recognition, 2001
- [9] Dr.K.Venkata Nagendra , Dr.Maligela Ussenaiah , Mr.G.Rajesh, "Driver Drowsiness Monitoring System using Visual Behaviour Using SVM", The International journal of analytical and experimental modal analysis Volume XII, Issue IV, April/2020
- [10] R. Kumaran, M. Karthick, R. Deepak Kumar, B. Rahul Final, "Driver Drowsiness Monitoring System using Visual Behaviour and Machine Learning", International Journal of Engineering Research & Technology (IJERT), 2020
- [11] R. Ahmad, J. N. Borole, "Drowsy Driver Identification Using Eye Blink Detection", IJISSET - International Journal of Computer Science and Information Technologies, vol. 6, no. 1, pp. 270-274, Jan. 2015.
- [12] M. Dehnavi, N. Attarzadeh, M. Eshghi, "Real time eye state recognition", IEEE Iranian Conference on Electrical Engineering (ICEE), May 2011.
- [13] Jaeik Jo Sung Joo Lee, Ho Gi Jung, Ryoung Park, Jaihie Kim "Vision-based method for detecting driver drowsiness and distraction in driver monitoring system", Optical Engineering Vol 50(12) December 2011.