

# A Review on Eye Aspect Ratio Technique

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**Abstract:** *One of the most common factors that contributes to the deaths and injuries caused by road accidents is drowsiness. It can also affect the performance of a driver. Detecting eye blinks is an essential part of various driver safety applications. The rapid pace of blinking makes it incredibly challenging to detect eye blinks automatically. This paper presents a method that can be used to identify eye blinks captured by a camera. The suggested method takes into account the facial landmarks for each frame and then takes the distance between the eyes from these landmarks. The proposed technique calculates the positions of the facial landmarks, uses the Eye Aspect Ratio (EAR) to extract a single scalar quantity, and determines the eye closeness in each frame.*

**Keywords:** Drowsiness Detection, Eye Aspect Ratio, Facial Landmarks

## REFERENCES

- [1]. P. Viola and M. Jones, "Rapid Object Detection using a Boosted Cascade of Simple Features", Proceeding of International Conference on Computer Vision and Pattern Recognition (CVPR), (2001), Kauai, HI, USA.
- [2]. B. Alshaqqi, A. S. Baquhaizel, M. E. A. Ouis, M. Bouumehed, A. Ouamri, M. Keche, "Driver Drowsiness Detection System", IEEE International Workshop on Systems, Signal Processing and their Applications, 2013
- [3]. B. N. Manu, "Facial features monitoring for real time drowsiness detection," in Proc. 12th Int. Conf. Innov. Inf. Technol.(IIT), Nov.2016
- [4]. C. MURUKESH, PREETHI PADMANABHAN Drowsiness Detection for Drivers Using Computer Vision
- [5]. I. Lashkov, A. Kashevnik, N. Shilov, V. Parfenov, and A. Shabaev, "Driver dangerous state detection based on OpenCV & dlib libraries using mobile video processing," in Proc. IEEE Int. Conf. Comput. Sci. Eng. (CSE) IEEE Int. Conf. Embedded Ubiquitous Comput. (EUC), Aug. 2019, pp. 74–79, doi: 10.1109/CSE/EUC.2019.00024.
- [6]. S. Sathasivam, A. K. Mahamad, S. Saon, A. Sidek, M. M. Som and H. A. Ameen, "Drowsiness Detection System using Eye Aspect Ratio Technique," 2020 IEEE Student Conference on Research and Development (SCoReD), 2020, pp. 448-452, doi: 10.1109/SCoReD50371.2020.9251035
- [7]. A. Ghourabi, H. Ghazouani, and W. Barhoumi, "Driver drowsiness detection based on joint monitoring of yawning, blinking and nodding," in Proc. IEEE 16th Int. Conf. Intell. Comput. Commun. Process. (ICCP), Sep. 2020, pp. 407–414, doi: 10.1109/ICCP51029.2020.9266160.
- [8]. Fouzia, R. Roopalakshmi, J. A. Rathod, A. S. Shetty and K. Supriya, "Driver Drowsiness Detection System Based on Visual Features," 2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT), 2018, pp. 1344-1347, doi: 10.1109/ICICCT.2018.8473203.
- [9]. J. Singh, "Learning based driver drowsiness detection model," in Proc. 3rd Int. Conf. Intell. Sustain. Syst. (ICISS), Dec. 2020, pp. 698–701, doi: 10.1109/ICISS49785.2020.9316131
- [10]. P. Wang and L. Shen, "A method of detecting driver drowsiness state based on multi-features of face," 2012 5th International Congress on Image and Signal Processing, 2012, pp. 1171-1175, doi: 10.1109/CISP.2012.6469987