

ABSTRACT

Traffic accidents are the most common accidents in the world, especially in Indonesia. Many traffic accidents were caused by several factors, one of which is the driver's drowsiness. Based on the data provided by Bandung Police Department, throughout 2018, out of 495 traffic accidents, 135 among them were caused by driver's drowsiness. Driver's drowsiness often arises when the driver starts to get tired or when the trip feels boring, such as a long-distance trip or when they're in a traffic jam for too long.

At this time, not many driver drowsiness detection systems have been applied. For example, bus drivers on long trips must always be accompanied by a 'kernet' or driver's assistant when travelling. Monitoring with a 'kernet' is less effective because if the 'kernet' is asleep, no one will monitor the driver's drowsiness. For this reason, the author wants to design a system that could detect the TMB bus driver's tiredness using a real-time webcam with the Eye Aspect Ratio formula approach.

Eye Aspect Ratio works by calculating the Euclidean distance between 6 facial landmarks in each eye. The system's accuracy will be tested by acquiring the face of the TMB bus driver, and will be calculated if the driver detected as sleepy. Based on the test, the best EAR threshold score is 0.23 with the accuracy score 79%. After testing the system's accuracy, continued by real-time detection. As a result, the face position and the light intensity affects the detection. With this system, the writer hopes it could help bus drivers, especially TMB, to remind their drivers when they are drowsy.

Key Word: *Drowsiness Detection, Eye Aspect Ratio, Facial Landmarks, Real-Time, Trans Metro Bandung*