

ABSTRACT

The growth of technology implementation in order to ensure flexibility and safety for vehicle has been greatly evolved. The vehicle technology, especially for the driver safety are required, thus the new application is introduced to assist the driver. The webcam based video processing technology enable the avi format recording for drivers' condition corresponding to their face in some period of time.

According to the recorded video, we calculate the pixel width and thickness of the iris after cropping the image around the eyes. The calculation method was done by determine the difference between the black colored pixel of the top of the irises to the bottom. Hence, we can see the difference of pixel thickness for every frame and then enable the eyes winking detection. On the other hand, the pixels width was calculated by summing the entire black colored pixels. When the black colored pixels width are below the threshold level for several frame, then the system signal the warning sign.

In this final project, we create the analysis and simulation to indicate the effect of light glowing to determine the default RGB and eyes winking threshold value for detection performance. The results show that the best performance is obtained from the video recording taken at 20.00-21.00 pm. This is indicate by 82.48% detection accuracy level achievement for different time duration and eyes condition.

Keywords: aviread, digital video processing, eyes crop, pixel tickness