ABSTRACT

This final project made an application to detect iris and count the number of eyes blinking using *Circular Hough Transform*. Previous final project has been researched about fatigue detection on computer user by identify pupil size using Gabor Wavelet Transform with an accuracy rate 83,33%, but do not count eyes blinking to prevent fatigue on computer user's eyes.

To calculate the number of eyes blinking, iris must be detected using *Circular Hough Transform*. Eyes blinking count if there are no circle detected for three frame or more. If more than 75 frames circle not detected, it means the range of radius less precise and need new radius for detection

To test performance of algorithms and application which implemented, it tested by several videos for radius optimization. Once the optimal radius is known, the system tested again with 30 video which divided into 15 women and 15 men in outdoor conditions. Overall, accuracy of the system is 81%.

Keyword : iris, eyes blinking, *Circular Hough Transform*