Arkhom Moungkhaodaeng 2009: Face and Eye Tracking for Drowsiness Detection using Image Processing Method. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Mr.Dusit Thanapatay, Ph.D. 60 pages.

This thesis proposes face and eye tracking for drowsiness detection using image processing method from digital camera and use the image processing for analyze drowsiness sign. The detection method consisting of two stages. First stage to receive the video image form digital web camera at 30 fps on image size 320 x 240 pixel and separate frame video into individual image. Next, the individual image is compute by skin color region algorithm. The result of skin color segmentation is located face information area in the image and cropped into the region of interest. Second stage to fine eye blink ratio in the face area by intensity pixel algorithm. The intensity pixel algorithm detected pupil of eye from face region. The result of intensity pixel algorithm is detection by eyelid when eye open and eye close for consider rate of eye blink. Theses method is simple to apply on programming for improve in the detection system real time.

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