

ABSTRACT

Fatigue is basically portray the condition of a person in need of rest and experiencing physical fatigue. A person suffering from fatigue will experience memory loss, loss of consciousness, and slow response to the environment. Fatigue will be a factor leading to loss of concentration on the computer users. This is not good for health. To overcome this, we need a new system and applications that can detect whether a computer user's fatigue in the normal state or in the fatigue condition in real-time. The image processing technology with the tools in the form of CCTV, the computer user's face position can be identified.

At this final assignment, will be identified condition of the pupils to detect the level of physical fatigue on the computer user's in real-time. The steps in this process are with the acquisition of pupils, pupil detection, preprocessing, feature extraction with Gabor wavelet method, and the identification of conditions. This method was chosen because of its strength as a data format and aspect of the character and shape recognition. Gabor wavelets will provide a various resistance brightness of the image.

The obtained accuracy is quite high, 83.334 % from the results of the system. Accuracy of the system is less good can be caused by many things, especially since the systems still making mistakes in detecting the pupils and counting the number of determination of the truth conditions are fatigue or not fatigue.

Key words: fatigue, digital image processing, Gabor wavelet, real-time.