



## International Journal of Innovative Research in Computer and Communication Engineering

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# A Review on LCD Brightness Management and Fatigue Recognition using Eye Detection

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**ABSTRACT:** Today's world is IT world and digital world. The increasing use of computers, laptops, mobiles in the workplace has brought about the development of a number of health concerns. Many individuals who work at a computers or laptops screen display terminal report a high level of job related complaints and symptoms including eye strain, headaches, blurred vision and dry or irritated eyes. This paper depicts a technique to brightness level of screen will reduce according to the capacity of brightness of human eye and also the system is able to successfully determine whether the person is in the drowsy state. In this paper we proposed the application of system for detecting drowsiness of operators working in front of machines or human computer interaction. To assess the effectiveness of this technique, we perform eye detection (localizing the centroid of the iris and pupil of eye) on images.

**KEYWORDS:** LCD (Liquid Crystal Display), GSM, MATLAB, PIC, Camera I-Ball Robo K20.

### I. INTRODUCTION

All types of screens use the majority of their energy to produce light. LCDs emit this light energy from the backlight. A smaller amount of energy is used to refresh the image on screen. As a general LCD rule, dark images use slightly more energy than light images because energy is required to "activate" the pixel. A "smart" LCD screen uses less energy than a standard LCD. Smart LCDs can dynamically adjust the brightness level of the screen's backlight based on the current image. For example, if most of the pixels are black, there's no need to turn the backlight up to full brightness, so the screen reduces power to the backlight, saving energy. Drowsiness is considered to be a very critical issue causing many fatal accidents, injuries and property damages. Therefore, it has been an area of intensive research in recent years. Drowsiness is an intermediate state between sleepiness and awakening. It reduces a person's attention and vigilance towards the tasks he or she is performing. Drowsiness can prove harmful in driving or operating any machine situations, where the industry employee loss of attention can causes major problems resulting in whatever we working on computers or laptops like loss of important data or files.

An eye tracking system is a device responsible for estimating the gaze. Therefore, the eye candidate can be extracted from the pre-processed eye ROI with skin color detection and morphology operation. Drowsiness is an intermediate state between sleepiness and awakening. It reduces a person's attention and vigilance towards the tasks he or she is performing. Drowsy driving detection is an important issue in today's society because falling asleep while working is clearly harmful. While the propensity to be sleepy affects one's ability to working safely even if the person does not fall asleep. Drowsiness has the following effects

- Decrease operator's attention to surroundings.
- Slow reaction time considerably.

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## II. PROPOSED WORK

### A. BLOCK DIAGRAM

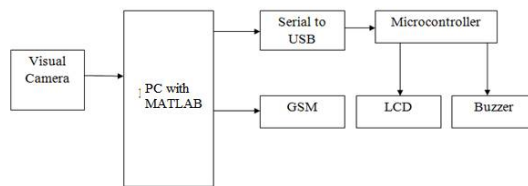
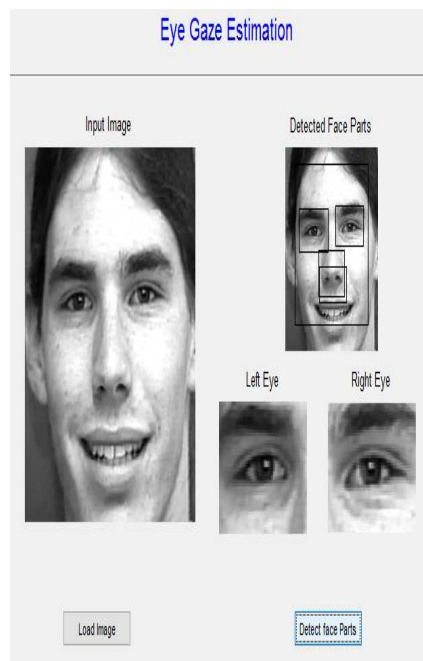


Fig 1-Block Diagram of Proposed System

## III. CONCLUDED WORK

- In this system we will reduce brightness level of screen when human is absent in front of screen. For implementation, we use different morphological operation. To assess the effectiveness of this technique, we perform two experiments. First, eye detection was performed on images from the training set and then adjust Lcd brightness This application is useful for corporate area or any office where they use maximum of PC.

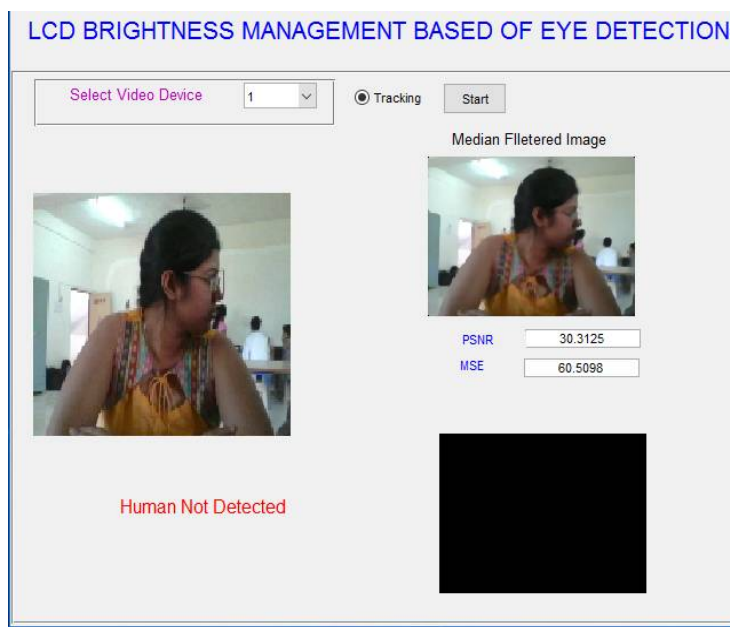
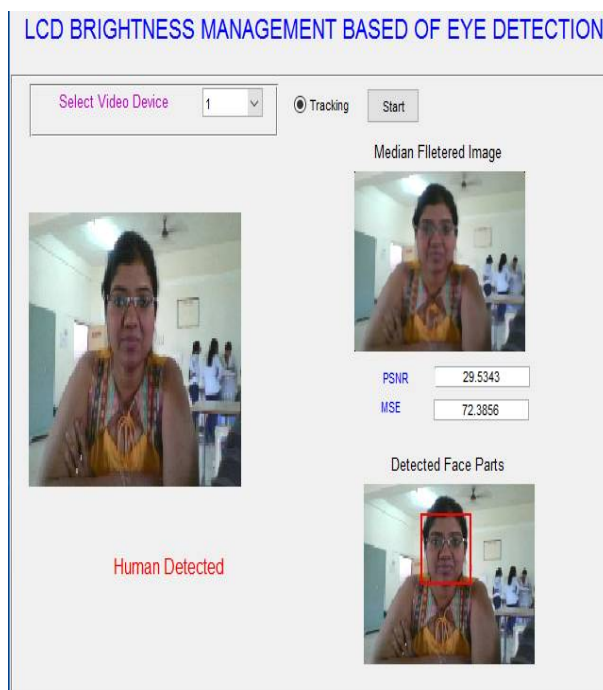


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## IV. APPLICATIONS

- 1) Human Computer Interaction.  
In this application, interaction between human and computer is done by using image processing.
- 2) Driver Fatigueness Detection.



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In this application, drowsiness of driver is detected.

3) In Laptops and Computers.

In this application, based on brightness capacity of the human eye we can control the brightness level of laptop and computers

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