

VIRTUAL EYE – LIFE GUARD FOR SWIMMING POOLS TO DETECT ACTIVE DROWNING

FUNCTIONAL REQUIREMENTS

Framework Creation

The advancement of technologies for avoidance drowsiness at the wheel is a key dilemma in the field of accident prevention systems. Prevent drowsiness in a swimming pool and send alert to the life savers. Drowsy Detection System has been developed, using a non-intrusive machine vision based concepts. This system offers a method for detecting drowsy person in a pool which could be used for observing a level. In this module, we can detect the swimmers movements from real time camera and it will be registered in admin interface.

Object Detection

Object Detection is an advanced form of image classification where a neural network predicts objects in an image and points them out in the form of bounding boxes. Create an underwater pool safety system that lowers the danger of drowning by analysing body movement patterns and integrating cameras with artificial intelligence (AI) technologies. Object detection thus refers to the detection and localization of objects in an image that belong to a predefined set of classes.

Drowsy Detection

Such systems are often created by mounting a camera that transmits underwater footage while analysing swimmer positioning to determine the likelihood that they would drown; if this probability is high, an alarm will be sent to draw lifeguards' attention. To analyse drowning, the YOLO algorithm is used to find the swimmers' location underwater.

Notification System

In this module send notification to the life savers at the time of drowsy prediction. If the position of swimmers is lesser than 50% means, provide notification alert to the lifeguards.

Non - Functional Requirements

Usability

The system shall allow the users to access the system with pc using web application. The system uses a web application as an interface. The system is user friendly which makes the system easy

Availability

The system is available 100% for the user and is used 24 hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.

Scalability

Scalability is the measure of a system's ability to increase or decrease in performance and cost in response to changes in application and system processing demands.

Security

A security requirement is a statement of needed security functionality that ensures one of many different security properties of software is being satisfied.

Performance

The information is refreshed depending upon whether some updates have occurred or not in the application. The system shall respond to the member in not less than two seconds from the time of the request submittal. The system shall be allowed to take more time when doing large processing jobs. Responses to view information shall take no longer than 5 seconds to appear on the screen.

Reliability

The system has to be 100% reliable due to the importance of data and the damages that can be caused by incorrect or incomplete data. The system will run 7 days a week. 24 hours a day.