## LITERATYRE SURVEY

#### VirtualEye - Life Guard for Swimming Pools to Detect Active Drowning

***AUTHOR NAME:******Lanagan-Leitzel***

***YEAR OF PUBLISHING****: 2015*

***ABSTRACT:***

*Lifeguard surveillance is a complex task that is crucial for swimmer safety, though few studies of applied visual search have investigated this domain. This current study compared lifeguard and non-lifeguard search skills using dynamic, naturalistic stimuli (video clips of confederate swimmers) that varied in set size and type of drowning. Lifeguards were more accurate and responded faster to drowning targets. Differences between drowning targets were also found:*

*passive drownings were responded to less often, but more quickly than active drownings,highlighting that passive drownings may be less salient but are highly informative once detected. Set size effects revealed a dip in reaction speeds at an intermediate set-size level, suggesting a possible change in visual search strategies as the array increases in size.Nonetheless, the ability of the test to discriminate between lifeguards and non-lifeguards offers future possibilities for training and assessing lifeguard surveillance skills.*

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***YEAR OF PUBLISHING****: 2019*

***ABSTRACT:***

*nowadays swimming pools are everywhere,Like in homes, restaurant, clubs. There will be lifeguard at every pool and many swimmers in the swimming pool also, but after that also there are many number of drowning incidents. And the numbers are increasing day by day. To protect the people from drowning in swimming pool, we are using machine learning and mesh lifting system to prevent drowning incidents. The system will contain a mesh which will help the drowning person to lift up in the water, this mesh movement will be controlled by the stepper motors which are connected to the Arduino Nano board, and there will be buzzer that will alert the people near swimming pool and. The drowning person is detected machine learning, using pi camera underwater which is trained to detect these kind of situations, the pi camera is connected to the Raspberry pi, this system is used to monitor the swimming pool, track swimmers in that, if any person is in drowning condition raspberry pi will detect it and it will send command to Arduino nano board to lift the mesh up. With the help of stepper motors The mesh will lift up along with the drowning person.*

***AUTHOR NAME:***

***YEAR OF PUBLISHING:***

Safety in swimming pools is a crucial issue. In this paper, a real time drowning detection method based on HSV color space analysis is presented which uses prior knowledge of the video sequences to set the best values for the color channels. Our method uses a HSV thresholding mechanism along with

Contour detection to detect the region of interest in each frame of video sequences. The presented software can detect drowning person in indoor swimming pools and sends an alarm to the lifeguard rescues if the previously detected person is missing for a specific amount of time. The presented algorithm for this system is tested on several video sequences recorded in swimming pools in real conditions and the results are of high accuracy with a high capability of tracking individuals in real time. According to the evaluation results, the number of false alarms generated by the system is minimal and the maximum alarm delay reported by the system is 2.6 sec which can relatively be reliable compared to the acceptable time for rescue and resuscitation.