LITERATURE SURVEY

VIRTUALEYE_ LIFEGUARD FOR SWIMMING POOLS TO DETECT ACTIVE DROWNING

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S.NO:	TITLE OF THE PAPER	YEAR OF THE PAPER	OBJECTIVE	METHODOLOGY	TAKE AWAY
1.	Swimmer motion analysis with application to drowning detection	2002 IEEE	To build an automated video surveillance system to detect potential drowning incidents.	Two event-inference modules have been developed: one evaluates the condition of a swimmer using a set of reasoning rules and triggers alarms after the swimmer remains in 'Possible drowning state' for a period longer than a preset duration and another relies on hidden Markov models (HMMs) to recognize drowning behavioral signs.	From this journal, we had learned that the drowning incidents are detected by examining the sequence of motion and shape features extracted from swimmers in the pools.
2.	A novel drowning detection method for safety of swimmers	2018 IEEE	To ensure detection of drowning and reporting at the earlier stages	Two drowning detection sensors are placed on the side elastic of the goggles. The Alarm transmission module is used to send the alarms when the drowning is detected. It's triggered by a drowning detection unit. The Alarms are transmitted using the underwater Communication.	From this journal, we use the Novel Camera-Based Drowning Detection Algorithm, which could predict the drowning.
3.	Automated Vision-based Surveillance System to Detect Drowning Incidents in Swimming Pools	2020 IEEE	An automated vision-based surveillance system to prevent drowning accidents	The system consists of a Raspberry Pi with the Pixy camera, an Arduino Nano board, an alarm system. The proposed system is based on the color-based algorithm to position and rescue swimmers who are drowning. The device then sends an alarm to the Lifeguards.	From this journal, we had learned that the hybrid system will automatically Detect a drowning person and then set off an alarm to alert lifeguards.

4.	IoT Based Safety Enhanced Swimming Pool with Embedded Techniques to reduce drowning accidents.	2020 IEEE	To reduce the drowning accidents and to save human life.	The wearable device on the wrist to monitor moment of human under water is designed. The imaging techniques with robust image smoothing algorithm were proposed for the early detection of drowning. Adaptive robust image smooth algorithm is proposed.	Through this journal, we learned that the portable device can also monitor and detect drowning people in the pool.
5.	An Improved Detection Method of Human Target at Sea Based on Yolov3.	2021 IEEE	To Search and rescue drowning people at the sea site.	The object detection method is based on deep learning and the Yolov3 algorithm which is a representative algorithm of the object Detection method.	From that journal, we use the YOLO algorithm. Because of its high accuracy and fast detection speed.