VIRTUALEYE - LIFE GUARD FOR SWIMMING POOLS TO DETECT ACTIVE DROWNING

PROBLEM STATEMENT:

Video surveillance can be used as a tool for monitoring and security. Observing public and private sites has increasingly become a very sensitive issue. The visual monitoring capabilities can be employed in many different locations to help people live more safely. Video- based surveillance systems are designed and installed in places such as railway stations, airports, and even dangerous environments. Image processing, pattern recognition and machine-vision based methods are efficient ways for real-time intelligent monitoring of the objects or events of interest.

The existing surveillance systems deliver valued information in monitoring of large areas. Applying intelligence in video surveillance systems allows real-time monitoring of places, people and their activities. The tracking approach can change with varying targets and can change from a single camera to multiple camera configurations. Tracking methods in video surveillance use different parameters such as objects' motion, position, path of movement and velocity , biometrics such as skin color or clothes color and many more. The tracking must be robust and overcome occlusion and noise which are common problems in monitoring. One important environment that the need for monitoring systems is crucially sensed is the swimming pool. Each year many people including children are drowned or very close to drowning in the deeps of the swimming pools, and the life guards are not trained well enough to handle these problems . This raises the need for having a system that will automatically detect the drowning person and alarm the lifeguards of such danger. Real-time detection of a drowning person in swimming pools is a challenging task that requires an accurate system. The challenge is due to the presence of water ripples, shadows and splashes and therefore detection needs to have high accuracy.