AEDDS – Automated Early Drowning Detection System using Computer Vision and Machine Learning

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Abstract

Humans were able to swim for a long period of time, long enough where nobody knows when someone swam for the first time. Because of this human nature still, we try to swim in every chance we get. Due to the increasement of the population and growth of cities, people tend to swim at swimming pools because of their busy schedules. Because of that, swimming pools are becoming a must factor for hotels, restaurants, apartment complexes, and even for some houses. Even though the number of swimming pools increases along with the population, lifeguards are not getting assigned to those places. That makes a major life threat to swimmers.

To avoid that a proper solution needed to be found. By surveying lifeguards and simmers and doing a literature survey. Early drowning detection methods were found. Combining those with computer vision and machine learning a prototype was created to detect drowning incidents before such an incident happens.

That prototype was tested and evaluated by professionals and identified future enhancements as well. Methods were found to increase the accuracy and those were documented in the thesis.

Keywords – AEDDS, Image Processing, Computer Vision, Machine Learning, CCTV camera.