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Detection of Submerged Objects With Machine Learning

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Abstract: The precision of underwater target recognition by autonomous underwater vehicles is a crucial guarantee for submerged object detection, rescue, and security. Object detection is time-consuming when investigating important regions of underwater surveillance, much as resource exploration or investigation. This paper provides solutions that are computer vision-based, automated, and based on machine learning. The purpose of this paper is to provide an ideal solution for underwater item identification that leverages the YOLOv3 architecture, an upgraded version of YOLO, and deep learning to automatically recognize underwater things. The goal behind this research is to search for the most efficient and accurate solutions for the detection, identification and classification of submerged objects and to design a fast operating system to detect object in the system and optimization for parallel computations, rather than the low computation volume theoretical indicator. We tried that the given object can be easily trained and used. In our system it gives the accuracy of 75% when the input data or image is clear aur noise reduced. But when the images are very diverse then the system gives the accuracy near 67 to 70 % .

Keywords: YOLOv3, Underwater image detection.

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