Literature Survey - 1

High-Speed Ship Detection In SAR Images By Improved YOLOv3

Nowadays, the current researches almost all are focusing on improving detection accuracy while speed is neglected. It is extrodinarily important to increase the Ship detection speed, because it can provide real-time ocean observation and timely ship rescue. In order to Solve this problem, we use a high-speed SAR ship detection approach by improved YOLOv3.

Methodology:-

In Order to improve the Speed of Ship detection, the original YOLOv3 is improved. Diffrent from the original YOLOv3 where 20 types of targets need to be detected, SAR target detection in this paper contains only one class that is ship, so the reduction of the network size does not significantly reduce accuracy by our research findings.

To reduce the size of the network, we use Darknet-19 as the backbone of the improved YOLOv3, which can reduce detection time. Repeated layers in YOLOv3-Scale1, YOLOv3-Scale2 and YOLOv3-Scale3. Finally inorder to make full use of the features extracted from the Network, we have added 2 feature concatenation paths which can improve detection accuracy.

The detection Speed of improved YOLOv3 is 2.3 times faster than the original YOLOv3. This means that improvements are correct and effective. This approach achieves high speed ship detection in SAR images by requiring only 24 ms per image.

We are Planning to base our project on a variation of YOLO.