Literature Survey - 2

Ship Detection : An improved YOLOv3 Method.

YOLO-Ship is one of the methods that are designed for Ship Detection based on YOLOv3. The main contributions of the method can be listed as follows.

- Determine the anchor setting for ship dataset by kmeans++ algorithm.
- Design a convolutional neural network named Darknet Sh to solve the problem of excessive YOLOV3 parameters.
- Embedded the Squeeze and Excitation module in YOLOv3 to increase the networks ability to extract global feature

YOLOv3 introduces anchors, a set of initial candidate boxes with fixed Width and height. Kmeans algorithm is selected to conduct dimension Clusters in YOLOv3 which is very sensitive to initial points of centroid. An improved Clusters algorithm named kmeans++ is introduced to solve this proble YOLOV3 establishes a Darknet53 convnet as a feature extractor which is too complex and redundant for ship detection. Based on Darknet-53, a convnet named Deerknet-Ship is designed to reduce the parameters and improve the performance of network. Squeeze and excitation (SE) module improves the expressive ability of network by accurately modeling the interaction b/w channels of convolution features.

A conclusion can be drawn that the YOLOv3-Ship improves the detection accuracy of YOLOv3 for large and medium sized This may be attributed to the modelling effects of SE module on the channels of salient Objects.

For our project we can use variations of modifications in this paper to use it with SAR images.