LS-SSDD-v1.0 Usage Instruction

The large-scale SAR ship detection dataset-v1.0 (referred to as: LS-SSDD-v1.0) was collected from the ESA Sentinel-1 satellite. It aims to build a SAR ship detection dataset oriented to large scene ocean observation and practical engineering applications, and promote in-depth research on advanced technologies such as SAR target detection. LS-SSDD-v1.0 was constructed by professor Xiaoling Zhang' team from School of Information and Communication Engineering, University of Electronic Science and Technology of China.

Fig. 1 shows the structure of LS-SSDD-v1.0. LS-SSDD-v1.0 contains JPEGImages, Annotations, ImageSets， JPEGImages_VH， JPEGImages_sub， Annotations_sub and Tools folders. The JPEGImages folder contains 15 VV polarization versions of the original large-scene space-borne SAR images. The Annotations contains 15 annotation files. The ImageSets contains the dataset division files. The JPEGImages_VH folder contains 15 VH polarization versions of the original large-scene space-borne SAR images. The JPEGImages_sub contains 2 subfolders and 9000 sub-images with 800×800 pixels that are obtained from the 15 VV polarization large-scale SAR images based on image cutting, note that due to limitation of GPU memory these sub-images are actually used in network training and test. The Annotations_sub contains 9000 annotation files corresponding to 9000 sub-images. The Tools contains a python file named images_stitch.py with the ability to concatenate sub-images into raw large-scene images and a user manual named user_manual.pdf.

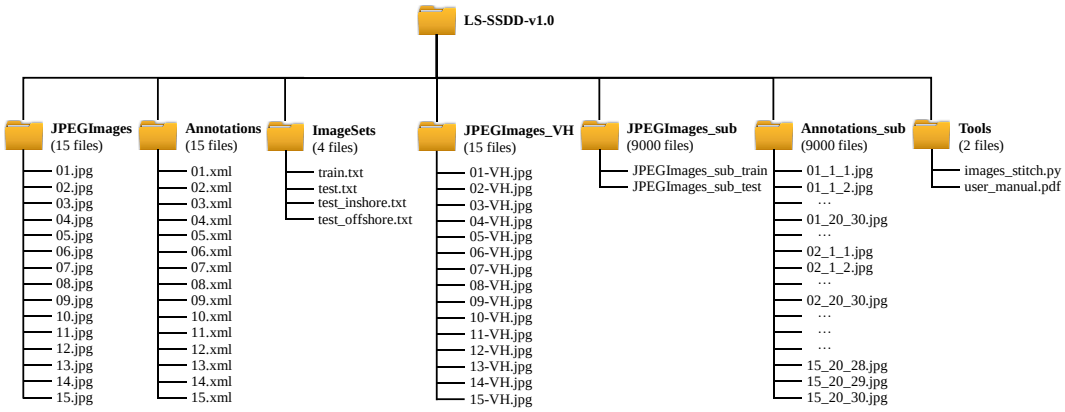
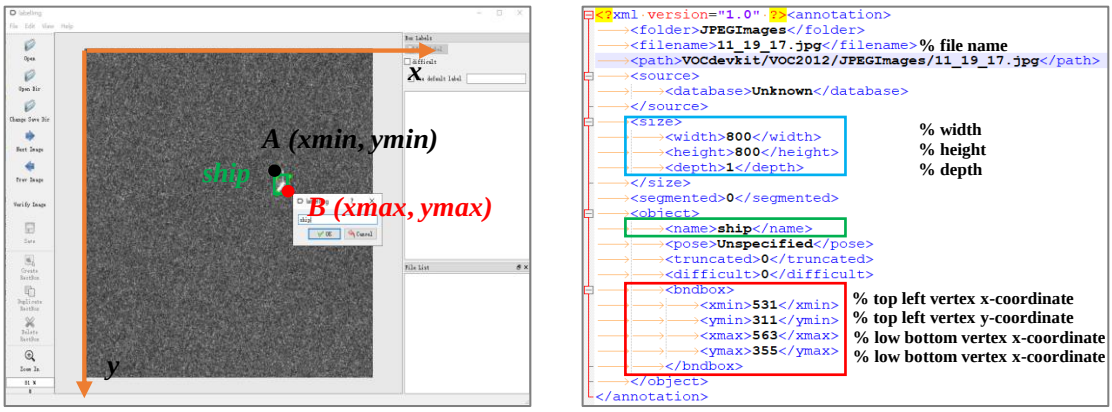


Fig.1 The structure of LS-SSDD-v1.0

Fig. 2 shows an annotation example of LS-SSDD-v1.0. Fig. 2(a) is a sub-image example, and Fig. 2(b) is a corresponding .xml file, which contains file name, image size, rectangle box annotation and other information. The rectangle box annotation contains the upper left and lower right vertex coordinate information of the target rectangle box. Taking Fig. 2(b) as an example, the file name is 11_19_17.jpg, the sub-image size is (800, 800, 1) and the top left and bottom right vertex coordinates of the rectangular box are (531, 311) and (563, 355) respectively.



(a) (b)

Fig. 2 Annotation example. (a) Sub-image example；(b) .XML file example

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References:

Tianwen Zhang, Xiaoling Zhang, Xiao Ke, Xu Zhan, Jun Shi, Shunjun Wei, Dece Pan, Jianwei Li, Hao Su, Yue Zhou, Durga Kumar. LS-SSDD-v1.0: A Deep Learning Dataset Dedicated to Small Ship Detection from Large-Scale Sentinel-1 SAR Images[J]. Remote Sensing, 2020, 12(18): 2997. doi: 10.3390/rs12182997.