Weekly Report

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***Abstract*—This week I mainly put my effort on improving deep learning methods accuracy of building extraction with post processing.**

I. SAR CONTEST

FROM the result last week, we basicly use up the potential ability of semantic segmentation networks. So we tried to analyze the outcome of neural networks, and do some refinement works this week.

- From the neural network output images, we can see that there are some black holes, surrounded by white buildings. Basically, there shouldn't be holes inside buildings. To fill these holes, we firstly find all contours in the image, which is the boundry of building, then fill these contours with white pixels. Finally, these holes were removed.
- Another problem is that there are some noises in the image. So we get rid of these noises by limiting the size of white area, since noise is generally small.
- We submitted this code, and the result shows about 0.5% improvement. This is not obvious.
- We are trying to seek for other methods to refine neural networks output image better to make use of the last chance.

Fig. 1 is RefineNet neural network result. Fig. 2 is GCN neural network result. Fig. 3 is the post processing result of RefineNet model. Fig. 4 is the ground truth image.

Fig. 1: RefineNet result

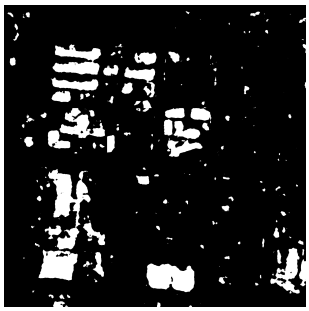

Fig. 2: GCN result

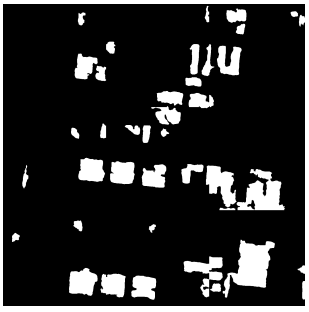

Fig. 3: Post processing result

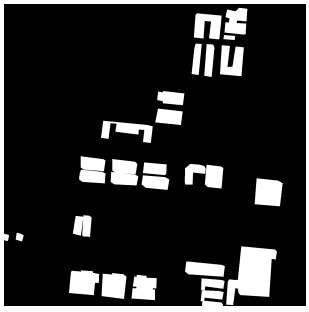

Fig. 4: Ground truth