Weekly Report

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***Abstract*—This week I mainly put my effort on preparing the data set and training DeepLab V2 model with this.**

I. Data Set

THE original data set the author used is Pascal VOC 2012. So we need to train it on our data set.

- We searched many related papers for proper data set. However, there are no visible spectral remote sensing data set we desired. So I have to build our own data set.
- We tried Google Maps, and attempted to remove text labels and extract 4 targets, including forest, road, building and river. But for Google Maps, I can't separate **building** from other objects, since there is only one button to control **man made**, which contains building and other man-made objects.
- **Solution:** Finally, I found one useful website called **Mapbox**. It fulfills our requirements perfectly, although it limits the number of images downloaded to 5 per account. The satellite image is Fig. 1, the label image is Fig. 2.

II. Training

After converting data set to the same format with the original one, we started training the model with our data set. During the procedure, we found that on training set, the accuracy can achieve **80%**. But on testing set, it's only about **60%**, which is really low. We plan to try following measures to improve performance.

- **Extend data set.** We have 1 000 images with size of 350×350 at first. I plan to download more images from **Mapbox** to train another.
- **Hyperparameters.** Since there is a bunch of parameters, I will try to adjust them to see the result.

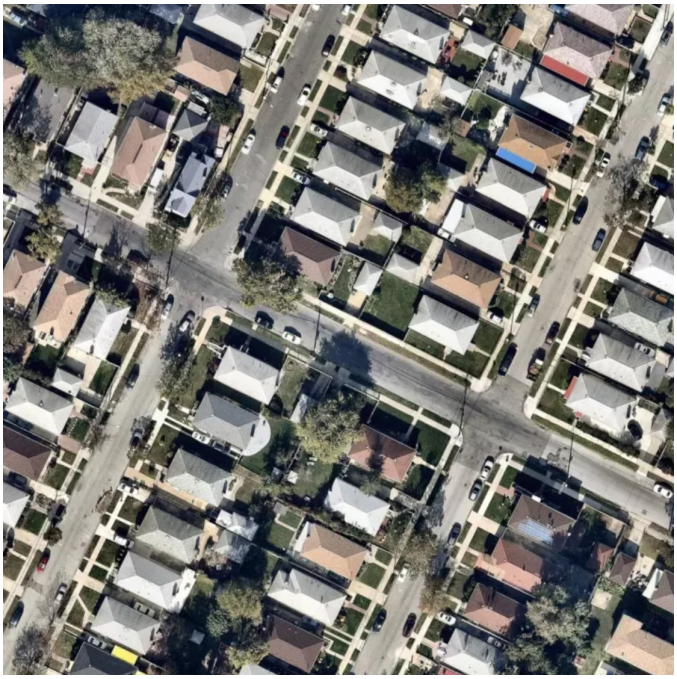

Fig. 1: Satellite image

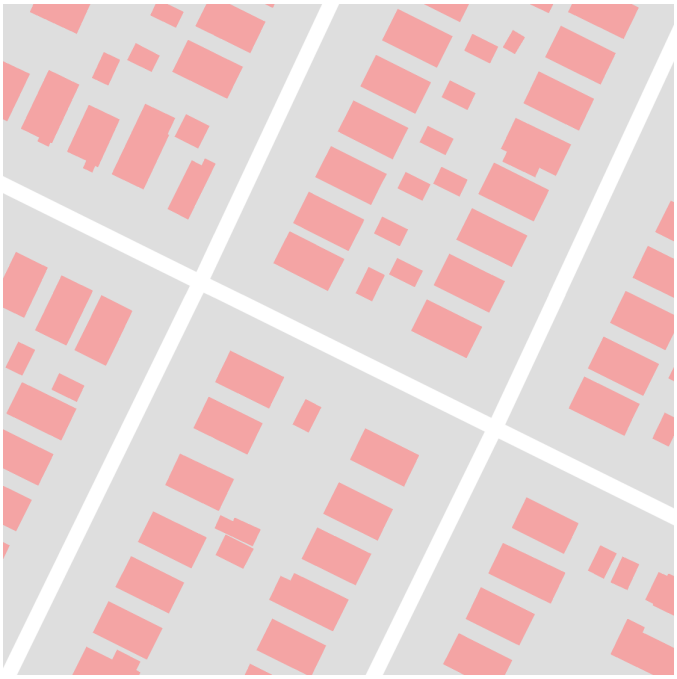

Fig. 2: Label image