

Weekly Report on Road analytics

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Outline of performed task :

- Object detection

Last time we have implemented object classifier for road scenes. Now, we have to detect them in a given frame so, we need a detector.

Currently we have Alexnet- a classifier. We can use below two approaches to find out possible regions in image frame that might contains our objects.

- Sliding window approach
- Selective Search (based on segmentation approach)

1. Sliding window

In our last project of AI, we have used HOG+SVM as classifier and sliding window but the main problems were too much false positives and worst bounding box predictions. We were also using NMS for reducing false bounding boxes.

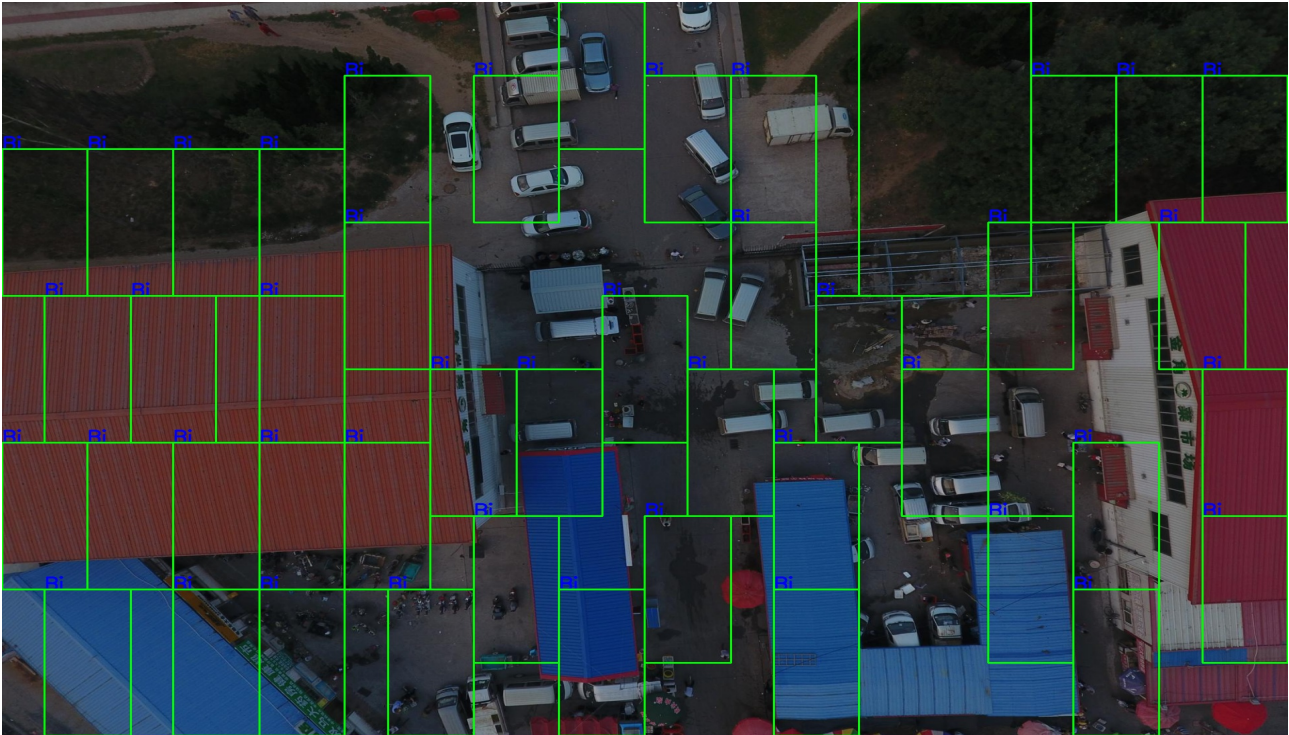
Sliding window parameters :

- Window size of 128 x 128, 64 x 64, 32 x 32

NMS parameters :

- NMS threshold= 0.7

Results of Alexnet + Sliding window + NMS



Conclusion :

- False positives
- Very bad quality of bounding box

2. Selective Search

This technique is very computationally expensive than the sliding window. It might take upto 2-3 minute to figure out region of proposals. So, we are not using it.

Tentive list of tasks for next session :

- look for better object detector