Weekly Report

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The Tasks I have finished this week

This week, I mainly focus on the review for final exam. In research, I mainly focus on some articles related with my research targets since I don't have much time practicing some ideas and write code.

I notice that although I have finished the **Faster R-CNN** task in VOC dataset (and learn some basic deep learning tricks), the Faster R-CNN structure itself is a little old structure(proposed in 2015) and there have been many improvement on it. So I read some papers about some extensions and improvement of the structure and write some reports about it, and they are:

1. R-FCN

   R-FCN is an improvement of Faster R-CNN in ROI pooling part. FCN is short for fully conventional network, which means all computation in network is convolution operation. It solves the last redundant part of Faster R-CNN, which is the fully connection part.

2. Feature Pyramid Networks for Object Detection

   FPN may be the first net proposing a way to use pyramid feature maps which is used in deep supervision structure to accelerate the convergence of loss function.

3. Focal Loss

   After totally know the basic knowledge and main schools in Object Detection, I review this article and understand many new things about the advantages and draw backs in the one-stage and two-stage detection methods. It gives me a good reference in choosing methods.

4. Speed/Accuracy trade-offs for modern object detectors

   It is a very very long article describe the speed and accuracy trade-off in the model network structures. It provides rich and useful experiments in training details and efficiency for different models.

These 4 articles quite helps me learn more about the Object Detection field, and give me some intuition on how to choose model to solve our extend Suggest Annotation targets.

The tasks I want to do next week

Next week, I will still focus on the final exam(and some course projects), but I will also spend as much time as I can on the research.

I will follow the time table, and I also raise some problems in the email. I will correct the time table based on the advices of the problems.