## Faster R-CNN: Towards Real-Time Object Detection with Region Proposal Networks

## 1 Citation

Ren, Shaoqing, et al. "Faster r-cnn: Towards real-time object detection with region proposal networks." Advances in neural information processing systems. 2015.

 $\verb|http://papers.nips.cc/paper/5638-faster-r-cnn-towards-real-time-object-detection-with-region-proposal-networks.pdf|$ 

## 2 Abstract

Fast R-CNN and SPPNet have made object detection fast, but now the bottleneck is the proposal of regions. We speed it up by making a region proposal network (RPN) that shares its convolutional layers with the detection network. We get state of the art on PASCAL VOC (70.4% mAP) at 5 frames per second.

## 3 Introduction