

人工智能信息分享

-----Faster R-CNN

WHAT

Faster R-CNN

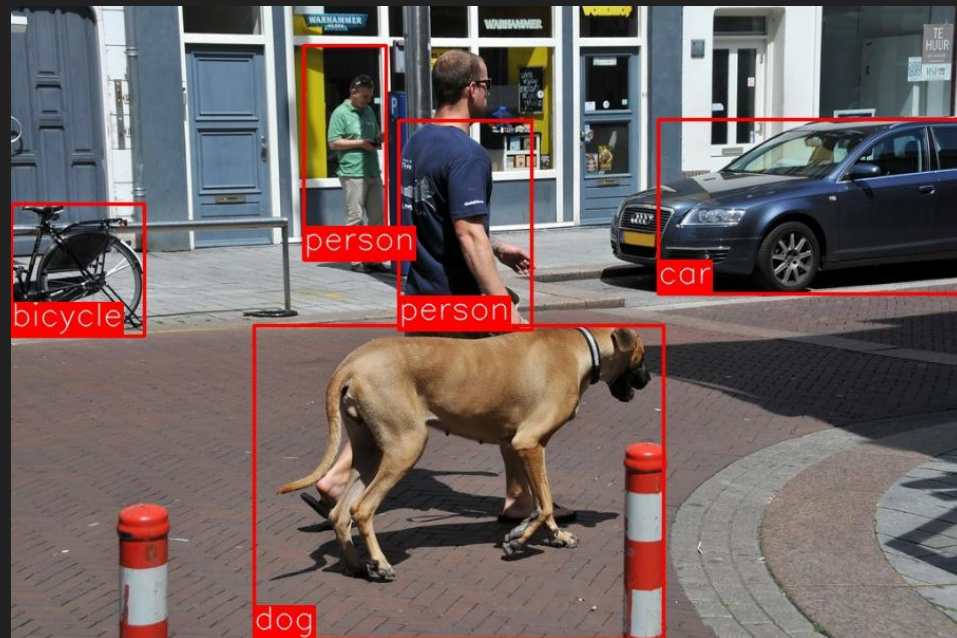
a paper of NIPS 2015

[Ren, Shaoqing. et al. "Faster R-CNN: Towards real-time object detection with region proposal networks." Advances in neural information processing systems. 2015.](#)



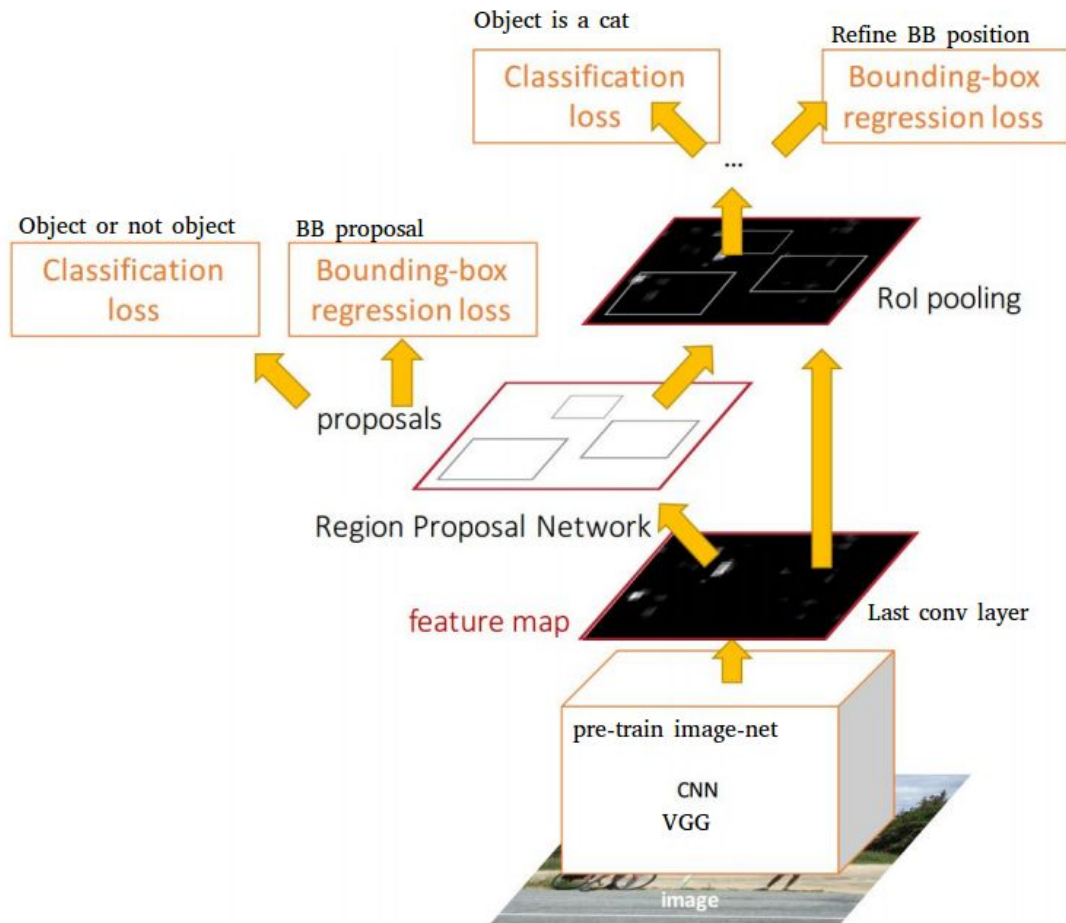
WHY

State-of-the-art object detection networks depend on region proposal algorithms to hypothesize object locations

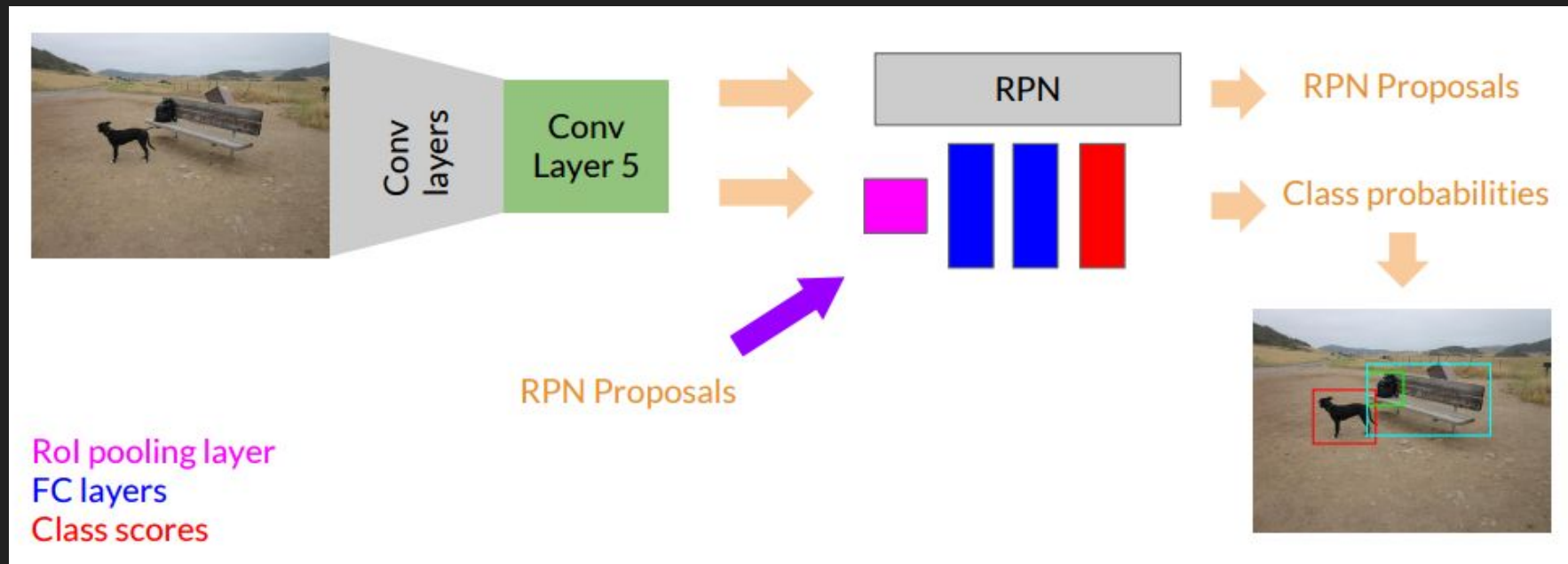


HOW

Region Proposal Network
shares full-image
convolutional **features** with
the object detection
network



Faster R-CNN= VGG16 + RPN + Fast R-cnn



Faster R-CNN= VGG16/ZF + RPN + Fast R-cnn

VGG16/ZF

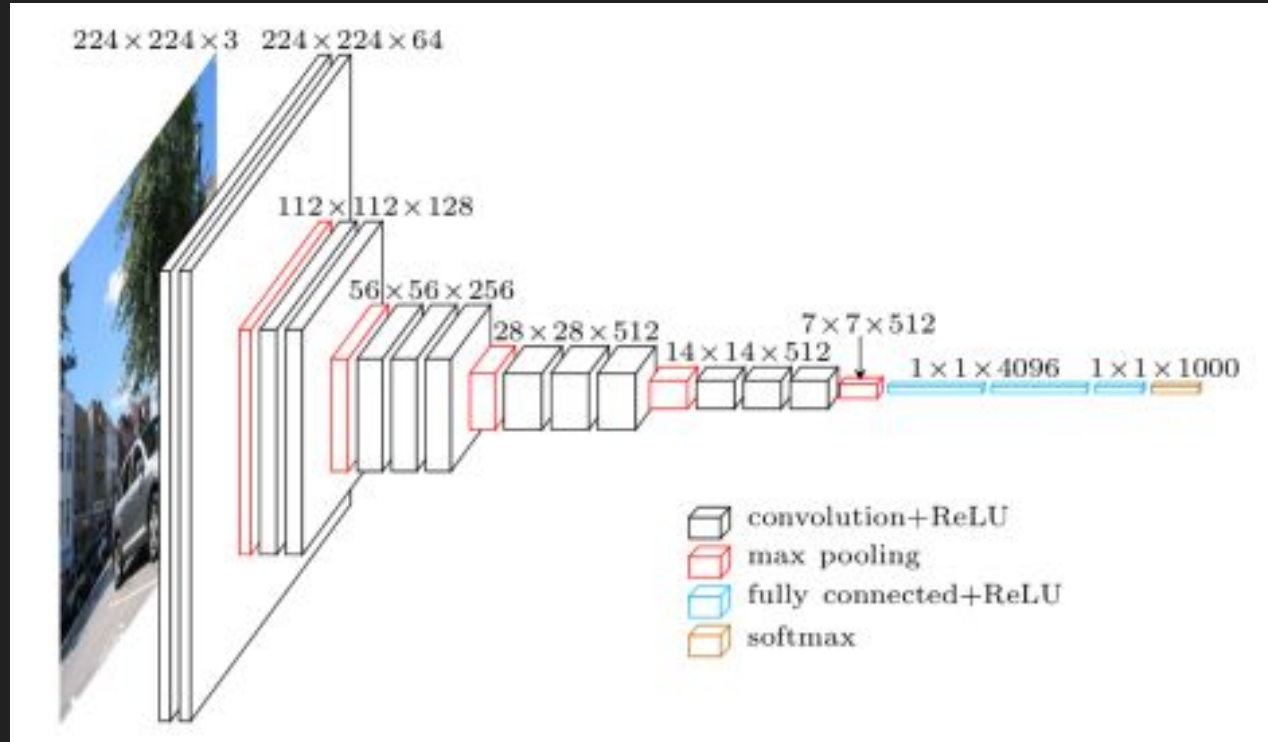
ImageNet Challenge

ConvNet Architectures

LeNet / AlexNet /

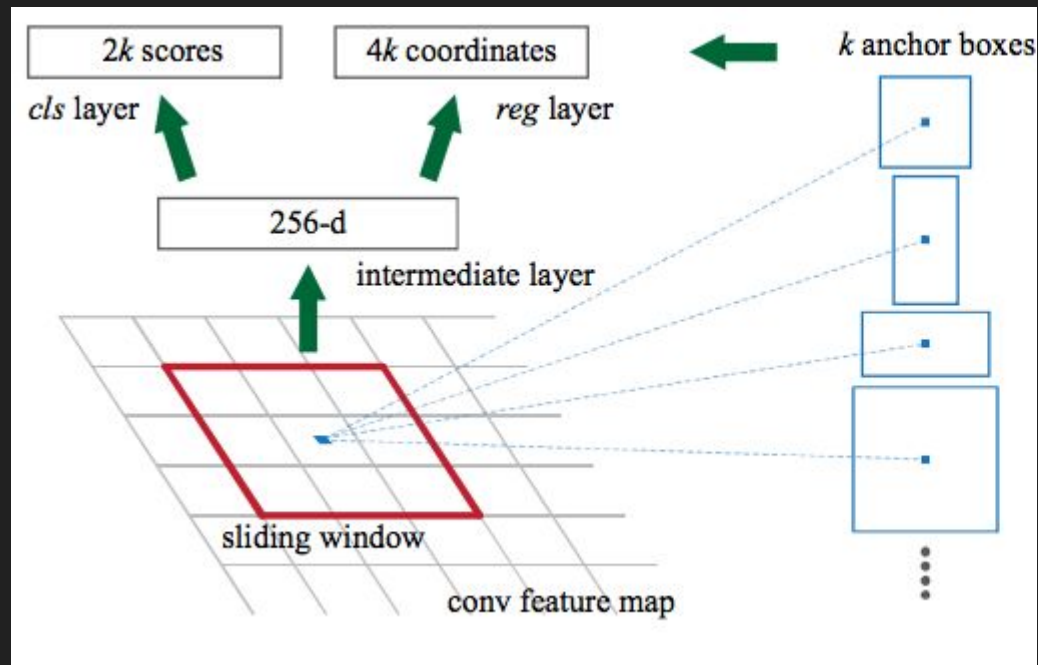
ZFNet / GoogLeNet /

VGGNet/ResNet

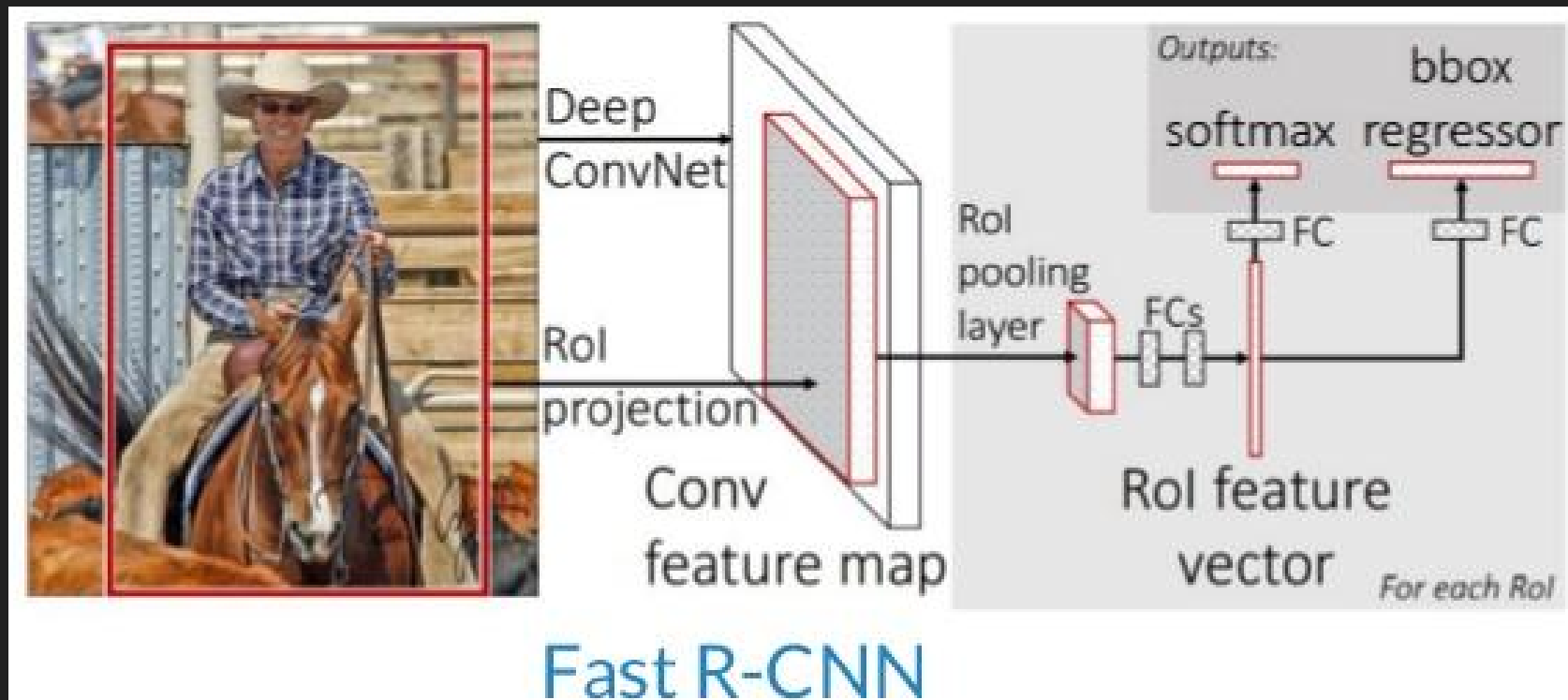


RPN Region Proposal Network

We use $n = 3$ in this paper, noting that the effective receptive field on the input image is large (171 and 228 pixels for ZF and VGG, respectively).



Object Detection Network



参考文献

<https://arxiv.org/pdf/1409.1556v6.pdf>

<http://cs231n.github.io/convolutional-networks/#architectures>

<https://github.com/rbgirshick>