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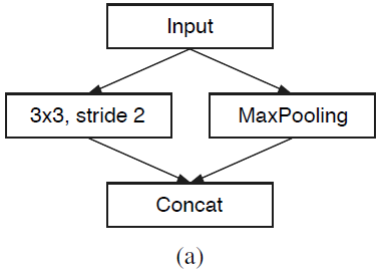
OpenCV4 深度神经网络(DNN)实战教程

实现图像分割

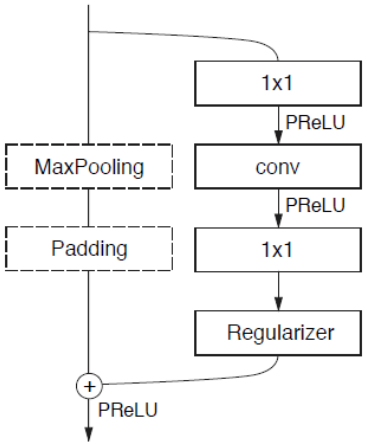
- 分割模型介绍
- 模型使用
- 代码演示

图像分割模型

- ENet网络模型，实时语义分割
- Initial block与bottle neck block



(a)



(b)

Name	Type	Output size
initial		$16 \times 256 \times 256$
bottleneck1.0	downsampling	$64 \times 128 \times 128$
$4\times$ bottleneck1.x		$64 \times 128 \times 128$
bottleneck2.0	downsampling	$128 \times 64 \times 64$
bottleneck2.1		$128 \times 64 \times 64$
bottleneck2.2	dilated 2	$128 \times 64 \times 64$
bottleneck2.3	asymmetric 5	$128 \times 64 \times 64$
bottleneck2.4	dilated 4	$128 \times 64 \times 64$
bottleneck2.5		$128 \times 64 \times 64$
bottleneck2.6	dilated 8	$128 \times 64 \times 64$
bottleneck2.7	asymmetric 5	$128 \times 64 \times 64$
bottleneck2.8	dilated 16	$128 \times 64 \times 64$
Repeat section 2, without bottleneck2.0		
bottleneck4.0	upsampling	$64 \times 128 \times 128$
bottleneck4.1		$64 \times 128 \times 128$
bottleneck4.2		$64 \times 128 \times 128$
bottleneck5.0	upsampling	$16 \times 256 \times 256$
bottleneck5.1		$16 \times 256 \times 256$
fullconv		$C \times 512 \times 512$

模型说明

- 输入：[NCHW]=Nx3x256x512
- 输出：[NCHW]=1x20x256x512
- 基于Cityscapes数据集
- https://github.com/gloomyfish1998/opencv_tutorial

代码实现

- 加载网络
- 设置计算后台为OpenCV DNN
- 道路分割与车辆分割

Thank You!