

OCR识别原理:

1. OCR (光学识别)
2. 如何从图像中提取文本:
 1. 检测到文字所在的位置 (CTPN)

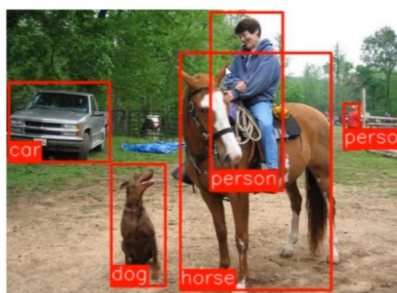


2. 识别文本区域内容 (CRNN)、



3. CTPN (Connectionist Text Proposal Network)

1. 文本检测本质上属于物体检测，但是文本却跟常规的物体有较大的区别

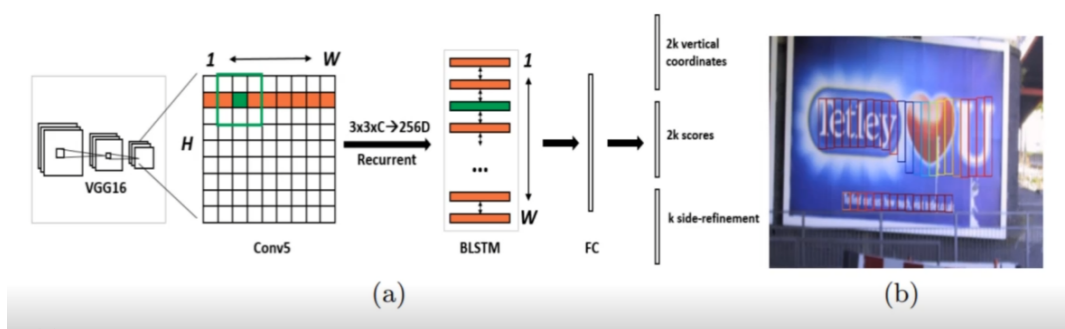


2. 文字与传统的物体不太一样，基于实际的文字的组成来涉及检测框架

3. 文本通常从左往右写的(水平), 并且字之间的宽度都大致相同
4. 固定宽度, 来检测文本高度即可, 但是如何应对变长序列呢?
5. 本质上还是RPN方法, 可将检测到的框拼接在一起

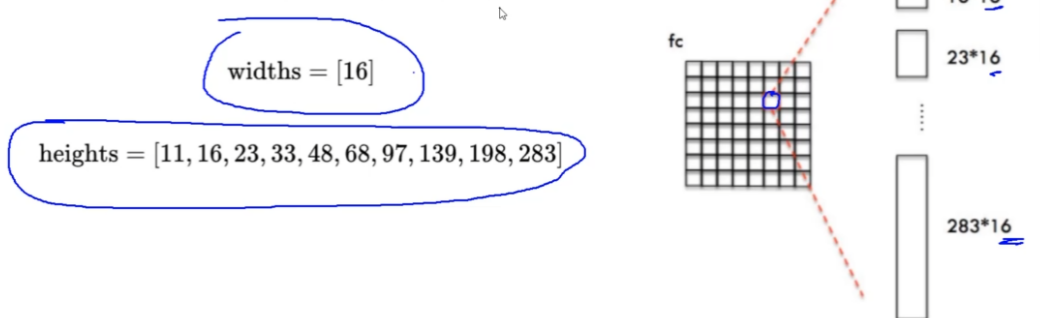


6. **VGG提取特征, BLSTM融入上下文信息, 基于RPN完成检测**



7. x不用再做微调, 需要对框在边界上进行微调, 只调位置, 不调节宽度
8. Anchor大小选择, 宽度固定, 长度选择了10个

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9. 输出结果包括三部分:

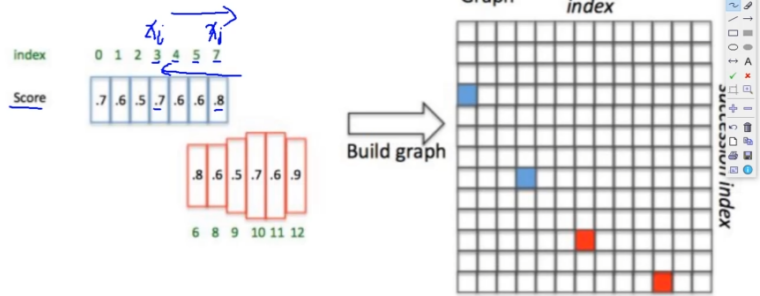
1. 2k得分
2. 2k回归
3. 1k边界调整

10. 检测到每一个小块文本区域还需拼接成完整的文本区域

11. 规则, 分前向和后向两部分:

12. CTPN网络:

举个栗子:



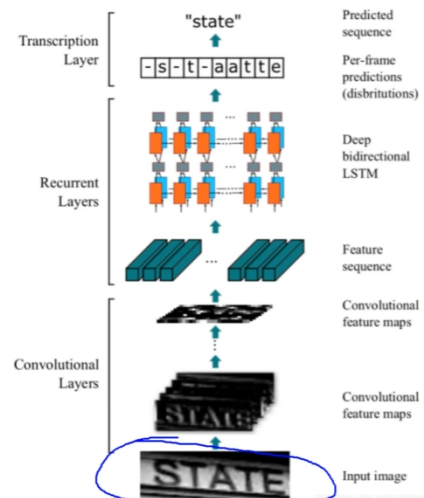
如果 $\text{score}_i \geq \text{score}_k$ 则这是一个长序列, 反之则该序列被更长的序列所包含。

13. CRNN算法:

CRNN算法:

一张图解释了网络架构:

- 首先CNN进行特征提取, 接下来RNN进行序列特征提取, 最后得出预测结果即可。



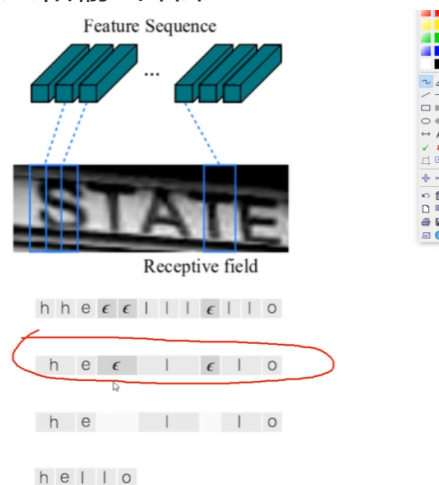
- 首先CNN进行特征提取, 接下来RNN进行序列特征提取, 最后得出预测结果即可
- 输入输出结果是变长的
- 构建RNN的输入特征序列
- 其中还涉及CTC模块, 目的是对齐输入和输出结果

CRNN算法:

构建RNN的输入特征序列:

6.

其中还涉及了CTC模块, 目的是对齐输入和输出结果:



4. OCR项目实战

Downloads - ICDAR2017 Competition on Multi-lingual scene text detection and script identification

Download below the training and validation dataset and associated ground truth information for each of the Tasks.

Task 1: Multi-script text detection

Training Set

- The "training set competition" 7,200 images (5.77 GB) and is split in 8 files.
 - Training Set Images 1/8 (311 MB)
 - Training Set Images 2/8 (467 MB)
 - Training Set Images 3/8 (1.2 GB)
 - Training Set Images 4/8 (1.2 GB)
 - Training Set Images 5/8 (1.1 GB)
 - Training Set Images 6/8 (1.01 GB)
 - Training Set Images 7/8 (532 MB)
 - Training Set Images 8/8 (61.2 MB)
- Training Set Localisation, Script and Transcription Ground Truth – 7,200 text files with word level localisation, script and transcription ground truth

Validation Set

- Validation Set Images (1.09 GB) – 1,800 images
- Validation Set Localisation, Script and Transcription Ground Truth – 1,800 text files with word level localisation, script and transcription ground truth

Test Set

- Test set images for Tasks 1 and 3 (same images for tasks 1 and 3).

Task 2: Cropped Word Script identification

Challenge News

- 04/09/2019
Extended: Special Issue on Scene Text Reading and its Applications
- 01/10/2019
New Challenges for 2019 Announced
- 11/11/2018
Special Issue on Scene Text Reading and its Applications
- 03/26/2018
Do NOT use qq.com emails to register or contact us
- 03/22/2018
Downtime due to scheduled revisions on 26 and 27 March 2018
- 09/29/2017
MLT results published !
- 05/31/2017
Test set available
- 05/11/2017
MLT -- Updated Downloads
- 04/03/2017
Downtime due to scheduled revision on

https://vdn3.vzuu.com/HD/994512da-2a1d-11eb-afd1-8627592acd a4.mp4?disable_local_cache=1&auth_key=1629107005-0-0-1649ac 96894dadff9cd66262e2f846d1&f=mp4&bu=http-com&expiration= 1629107005&v=tx