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论文

最新目录 | 下期目录 | 过刊浏览 | 高级检索

◀ 前一篇 | 后一篇 ▶

结合区域颜色一致性和图割的复杂场景文本分割方法

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Complex scene text segmentation method using region color consistence and graph cut

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摘要

图/表

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摘要

针对复杂场景文本难以有效分割的问题,提出一种复杂场景文本分割方法.首先,使用简单的线性迭代聚类(SLIC)算法将原始图像分割为若干局部区域,并在其区域邻接图上构建图割模型;然后,采用高斯混合模型(GMMs)和支持向量机(SVM)后验概率模型对场景文本进行建模,并引入每个局部区域与模型之间的匹配度用于计算似然能.为了增强GMMs的鉴别力,在参数学习中引入模型性能描述子,自适应地获得模型参数.实验结果表明,所提出的算法能够较好地处理复杂场景文本分割问题,文本的识别率得到了明显的提升.

关键词: 文档分析, 场景文本, 文本分割, 图割

Abstract:

To solve the problem of text segmentation in complex scene images, a method of complex scene text segmentation is proposed. The original image is firstly divided into some small homogeneous regions by using the simple linear iterative clustering(SLIC) algorithm, and the graph model is constructed based on the region neighborhood connection diagram. Then, Gaussian mixture models(GMMs) and support vector machine(SVM) post probability based model are proposed to make model for foreground(text), and the degree of each region's fitness to models is introduced to calculate likelihood energy. In addition, to improve the discrimination ability of GMMs, a model performance descriptor is introduced to estimate parameters of GMMs adaptively. Experimental results show that the proposed method can deal with the problem of complex scene text segmentation efficiently, and the recognition precision rate is improved significantly.

Key words: document analysis scene text text segmentation graph cut

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