

本期目录 | 下期目录 | 过刊浏览 | 高级检索
页] [关闭]

[打印本

论文

基于多特征扩展pLSA模型的场景图像分类

江悦, 王润生

湖南长沙国防科技大学电子科学与工程学院ATR实验室

摘要:

场景图像分类近年来受到人们的广泛关注, 而基于统计模型的方法更是场景分类中的研究热点。我们提出了一种新的基于多特征融合和扩展pLSA模型的场景图像分类框架。对每幅图像首先用多尺度规则分割确定局部基元, 然后提取每个局部基元的多分辨率直方图矩特征和SIFT特征, 最后用扩展的概率生成模型对图像集进行建模, 测试。我们的方法不仅能够很好的表示图像的语义特性而且在模型的训练阶段是无监督的。我们针对目前常用的3个数据库, 做了三组对比实验, 均取得了比以前的方法更好的识别结果。

关键词: 多分辨率直方图矩特征 场景分类 概率生成模型

Scene classification based on a multi-feature extended pLSA model

JIANG Yue, WANG Run-Sheng

ATR National Laboratory, School of Electronic Science and Engineering, National University of Defense and Technology, Changsha, China

Abstract:

Scene image classification has recently been popular. The classification methods based on statistical models have been the most important methods in scene classification. We propose a new scene image classification framework based on multi-feature and an extended pLSA model. We extract multiresolution histogram moments features and scale invariant feature transform (SIFT) features of patches of images. These patches are extracted on regular segmentations of different scales of every image. Both the features are scale invariant, so they can well describe the characteristic of image patches of different scales. At last, we use extended pLSA to model all training images. Test images are then dealt with a method called fold in. Our methods are not only unsupervised, but also can well represent semantic characteristic of images. We conduct three experiments on three often used image databases. We compare our methods with two previous baseline methods. And our methods get better results than the others.

Keywords: multiresolution histogram moments feature; scene classification probability generative model

收稿日期 2009-03-23 修回日期 2009-10-23 网络版发布日期 2010-04-25

DOI:

基金项目:

通讯作者:

作者简介:

作者Email: yue.jiang@163.com

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(1056KB)
- ▶ [HTML全文]
- ▶ 参考文献[PDF]
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

- ▶ 多分辨率直方图矩特征
- ▶ 场景分类
- ▶ 概率生成模型

本文作者相关文章

- ▶ 江悦
- ▶ 王润生

PubMed

- ▶ Article by Jiang, Y.
- ▶ Article by Wang, R. S.

参考文献:

本刊中的类似文章

