论文

基于多特征扩展pLSA模型的场景图像分类

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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

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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

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