

计算机科学

基于分形维数和SVM的新疆民间艺术图案分类

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摘要:

针对已有分类器存在的缺陷, 提出一种以分类错误率为标准选择组合特征的分类方法, 提高分类器的分类精度. 先提取图像的4种分形维数作为纹理特征, 再通过组合不同分形维数特征应用于支持向量机(SVM)进入样本训练阶段. 将分类错误率最低的特征组合作为分类器的特征向量, 应用于测试阶段的分类, 提高分类器的分类精度. 实验结果表明, 该方法具有较好的推广性, 为图像特征组合提取提供了新途径.

关键词: 分形维数; 新疆民间艺术图案; 支持向量机(SVM); 图案分类

Content Based Xinjiang Folk Art Patterns Classification Using Fractal Dimension and SVM

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Abstract:

To elucidate how to optimize combination features and to design a classifier with high classification accuracy, a challenging problem, a method based on error rate of classification as standard to select combined feature was presented so as to raise the classification accuracy. First, four kinds of fractal dimensions are extracted as texture features. Then, various combination features are training samples of SVM. With combination feature with the lowest classification error rate as a vector to be applied to the classification, the classification accuracy of the classifier can be improved. A variety of patterns are generated by primitive gene and regenerative gene. The proposed method is simple and easy in operation that can be widely popularized. So it can lay the foundation for the combination of image features.

Keywords: fractal dimension Xinjiang folk art patterns support vector machine(SVM) image classification

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