计算机工程与应用 2009 45 (20): 165-168 ISSN: 1002-8331 CN: 11-2127/TP

图形、图像、模式识别

基于遗传FCM算法和SVM的图像检索

梁竞敏

广东女子职业技术学院 艺术设计与信息技术系，广州 511450

收稿日期 2009-2-18 修回日期 2009-4-3 网络版发布日期 2009-7-9 接受日期

摘要 提出基于遗传FCM聚类算法和SVM相关反馈的图像检索方法。首先对图像库提取颜色和纹理特征，采用遗传FCM聚类算法对图像进行聚类，得到每个图像类的聚类中心；最后计算查询示例图像和对应图像类的图像之间的相似度，按照相似度的大小返回检索结果。为了进一步提高检索精度，提出基于SVM的相关反馈算法。实验结果表明，提出的方法具有优良的检索性能。

关键词 图像检索 遗传算法 模糊C均值聚类算法 支持向量机 相关反馈

分类号

Image retrieval based on genetic FCM algorithm and support vector machines

LIANG Jing-min

Department of Arts Design and Information Technology，Guangdong Women’s Polytechnic College，Guangzhou 511450，China

Abstract

Image retrieval method based on genetic fuzzy c-means algorithm and support vector machines relevance feedback is proposed.First of all，the color feature and texture feature of image library is extracted，and genetic FCM clustering algorithm is used to cluster image，each cluster center of image class is obtained.The similarity between the sample image and the corresponding categories is calculated，according to the size of the similarity to return to retrieval results.At last，a relevance feedback method based on support vector machines is proposed to further improve the accuracy of the retrieval.The experiments show that the proposed method has a good image retrieval performance.

Key words image retrieval genetic algorithm Fuzzy C-means Clustering algorithm Support Vector Machines（SVM） relevance feedback

DOI: 10.3778/j.issn.1002-8331.2009.20.049

通讯作者 梁竞敏 gzmliang@126.com