

一种新的颜色空间特征图像检索

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摘要 将检索图像转换为HSV颜色空间, 分别对各颜色子空间进行Radon变换, 并对投影数据中心化以消除平移影响. 针对各颜色分量, 利用Radon变换的奇异值的统计特性提取了具有尺度不变性的奇异值, 由于矩阵的奇异值分解具有旋转不变性, 因此该奇异值为平移、尺度和旋转不变的特征向量. 将特征向量进行高斯归一化, 采用其欧氏距离计算彩色图像的相似度并进行图像检索. 试验结果表明该方法比其他算法具有更好的检索效果.

关键词 [图像检索](#) [Radon变换](#) [奇异值分解](#)

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New approach for image retrieval based on color and spatial features

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Abstract

The invariant of Radon transform using the statistical theory is constructed and a new kind of color image retrieval algorithm based on Radon transform is presented. In the first place, the shift invariant project is achieved by centering the Radon project of HSV color space. The singular values of the project can be used as the character vector. The singular values of the scaling invariant can be obtained by the statistical characteristics of Radon transform. Since the singular values of the matrix are uncorrelated with the position of the column or the row of the matrix. In this way, the character vector of singular values with shift, scaling and rotational invariant is arrived at by this algorithm. The Gaussian model is used to normalize the different sub-character distances to the character vector. The similarity between the querying image and other images is computed by the Euclidean distance. Experiments indicate that this method has a higher retrieval-rate than other methods.

Key words [content-based image retrieval](#) [radon transform](#) [singular value decomposition](#)

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