

工程与应用

## 特征级数据融合在医学图像检索中的应用

焦蓬蓬, 郭依正

南京师范大学 泰州学院 信息科学与技术系, 江苏 泰州 225300

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**摘要** 医学图像检索的效果很大程度上取决于特征提取的优劣。针对医学图像的自身特点, 采用直方图、Gabor小波、不变矩三种典型方法分别提取了颜色、纹理、形状三类特征, 然而将各种方法提取的特征直接用于图像检索效果并不理想。为此, 提出了基于主元分析的特征级数据融合算法, 避免了不同特征间数值上的悬殊对分类的影响, 同时还达到了特征降维、去除特征间冗余的目的。实验结果表明, 融合后的特征能更好地表达医学图像的内容, 在医学图像检索中取得了较好的检索效果。

**关键词** [主元分析](#) [图像检索](#) [特征提取](#) [医学图像](#)

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## Application of feature-level data fusion in medical image retrieval

JIAO Peng-peng, GUO Yi-zheng

Department of Information Science and Technology, Nanjing Normal University Taizhou College, Taizhou, Jiangsu 225300, China

### Abstract

The results of medical image retrieval mainly depend on the quality of feature extraction. For the characteristics of the medical image, three typical feature extraction methods such as histograms, Gabor wavelet and invariant matrix are adopted to extract color feature, texture feature and shape feature respectively. But those features extracted by the various methods are used to medical image retrieval directly, the results are not satisfactory. So a feature-level data fusion algorithm based on PCA is proposed, the influence of classification caused by the wide gap of the value in different features can be avoided, in the mean time, it can reduce the dimension and the redundancy of the features. The experiments proves that the fused features can express the content of the medical image better, and a better result can be gotten in the medical image retrieval.

**Key words** [Principle Component Analysis \(PCA\)](#) [image retrieval](#) [feature extraction](#) [medical image](#)

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通讯作者 焦蓬蓬

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