

图形、图像、模式识别

## 多分辨率二维直方图阈值分割方法

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**摘要** 鉴于二维直方图阈值分割方法利用灰度的空间相关性取得高的分割效果和多分辨率阈值分割方法具有阈值搜索灵活高效的特点, 提出了一种基于多分辨率的二维直方图自适应阈值分割的结合方案, 降低了二维直方图计算复杂度, 提高了多分辨率阈值方法的搜索精度。实验结果表明, 该方法取得的分割结果与二维直方图方法基本一致, 计算复杂度随分辨率的级数成指数下降。

**关键词** [直方图](#) [多分辨率](#) [阈值](#) [图像分割](#)

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## Threshold segmentation method with 2-D histogram based on multi-resolution analysis

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### Abstract

This paper proposes an auto-adaptive threshold method of two-dimensional (2-D) histogram based on Multi-Resolution Analysis (MRA), decreasing the calculation complexity of 2-D histogram whereas improving the searching precision of multi-resolution threshold method. Such method originates from the extraordinary segmentation effects achieved by 2-D histogram threshold segmentation method through the spatial correlation of gray level and the flexibility as well as efficiency of the threshold searching of multi-resolution threshold segmentation method. Experiments results demonstrate that such method can obtain segmentation results similar with the exhaustive 2-D histogram method, whereas the calculation complexity decreases exponentially with the increase of resolution level.

**Key words** [histogram](#) [multi-resolution](#) [threshold](#) [image segmentation](#)

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