

图形、图像、模式识别

二维A Tuous算法图像边缘检测研究

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摘要 边缘检测是图像处理的重要内容。由于图像边缘和噪声都具有高频特性, 而且噪声的分布往往是未知的, 所以用单一尺度的边缘检测很难准确地检测图像边缘。而基于小波的二维A Tuous算法可以检测不同尺度下的图像边缘。在小尺度下检测边缘细节, 大尺度下检测边缘轮廓。该文介绍了二维A Tuous算法的基本原理和算法实现, 并通过实例与传统方法比较。实验结果表明, 该方法可以有效地检测图像的边缘, 并优于传统方法。

关键词 [A Tuous算法](#) [多尺度分析](#) [边缘检测](#)

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Research of edge detection based on 2-D A Tuous algorithm

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Abstract

The image edge detection is an important part of the image processing. For the image edge and noise are with the high-frequency characteristics and the distribution of noise is always unknown, the single-scale edge detection is hard to detect the image edge accurately. However, the 2-D A Tuous algorithm based on wavelet can detect the image edge in different scales. It detects the details of the edge in the small-scale, and detects the contour of the edge in the large-scale. This paper introduces the basic principle and operator implementation of the 2-D A Tuous algorithm, and compares it with traditional methods through the experiment. The experiment shows that this algorithm can detect the image edge effectively, and it is better than the traditional methods.

Key words [A Tuous algorithm](#) [multi-scale analysis](#) [edge detection](#)

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