

强噪声条件下二维图像亚像素边缘检测改进

姚一永, 唐 黎

(西南财经大学 天府学院, 四川 成都 610052)

摘 要: 提出一种基于灰度矩的二维图像亚像素边缘检测改进方法. 首先对二维图像的边缘快速定位, 确定图像边缘点坐标; 构建基于灰度矩的图像边缘检测数学模型, 通过计算和调整边缘两侧灰度值、角度及方位等参数, 求解边缘直线方程; 最后对二维图像边缘进行误差校正和除噪声处理, 完成二维图像亚像素的边缘检测. 试验证明提出的方法在强噪声环境下, 能够有效实现二维图像亚像素边缘检测, 精度更高, 计算简洁, 而且运行速度快.
关键词: 二维图像; 灰度矩; 边缘检测

Improvement of Image Sub Pixel Edge Detection in

Strong Noise Condition

YAO Yi-yong, TANG Li

(Tianfu College, Southwestern University of Finance and Economics, Chengdu 610052, China)

Abstract: Put forward a method based on improved sub-pixel edge detection of gray moment of two-dimensional images, first of all on the two-dimensional image fast edge positioning, determine the coordinates of the image edge points; building a moment of gray image edge detection mathematical model based on, through the calculation and adjustment on both sides of the edge of the gray value, angle and orientation of parameters, edge linear equations; finally the 2D image edge error correction and noise removal treatment, two-dimensional image sub-pixel edge detection. Experiments show that the proposed method can effectively realize the image sub pixel edge detection in strong noise environment, which is more accurate, simple and fast operation.

Key words: two dimensional image; gray moment; edge detection

作者简介:

姚一永 男, (1975-), 博士研究生, 讲师. 研究方向为图形图像处理、智能金融. E-mail: yiyongyao@yahoo.com

唐 黎 女, (1984-), 博士研究生, 讲师. 研究方向为商业资讯系统, 智能金融.