

## 基于图像融合技术的运动目标图像识别研究

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**摘 要:** 运动目标图像具有特征点分布不稳定和图像采集信噪比较低等特点, 对其准确识别的精度不高. 传统方法采用边缘轮廓特征分割的目标识别算法, 当图像受到不规则色噪声干扰时, 图像融合后的峰值信噪比较低. 提出一种基于深度超像素图像融合技术的运动目标图像识别方法. 对复杂背景干扰下采集的运动目标图像进行小波降噪处理, 对降噪提纯后的图像采用自适应纹理密度量化估计方法进行图像深度超像素特征分割, 得到图像的主分量边缘轮廓信息特征, 对输入的运动目标图像进行向量量化处理, 实现图像特点的匹配和融合, 达到图像识别的目的. 仿真结果表明, 用该算法进行运动目标图像融合处理, 像素特征匹配的均方根误差较低, 提高了输出图像的峰值信噪比, 从而提高了图像识别精度.

**关键词:** 图像融合; 运动目标图像识别; 特征提取; 小波降噪

## Research on Image Recognition of Moving Target Based on Image Fusion Technology

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**Abstract:** The moving target image has the characteristics of unstable feature points distribution and low SNR of image acquisition, which is not very accurate. Traditional method uses the target recognition algorithm of edge contour feature segmentation, when the image is disturbed by the irregular color noise, the peak signal to noise ratio of the image fusion is low. A moving target image recognition method based on depth pixel image fusion technology is proposed. Gathering under the complex background image of moving targets were wavelet denoising processing, for image noise reduction after purification using texture adaptive quantization density estimation method for image depth super pixel feature segmentation, image principal component edge contour feature information, the input image of moving targets were vector quantization processing, realize image matching and fusion, achieve the purpose of image recognition. The simulation results show that the algorithm is used to deal with the image fusion of moving objects, the root mean square error of the pixel feature matching is low, the peak signal to noise ratio of the output image is improved, and the image recognition accuracy is improved.

**Key words:** image fusion; moving target image recognition; feature extraction; wavelet denoising

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