

论文

## 基于Fisher变换的多尺度图像识别方法及其车形识别应用

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摘要

该文提出了一种图像识别方法。该方法首先对识别图像进行多尺度小波分解,把不同尺度的分解结果组织为分解向量,再对分解向量作Fisher变换。在Fisher变换域内依据最小绝对距离(或相对距离)识别图像。该方法主要依据小波分解低频分量进行识别运算,对噪声不敏感;同时识别结果已经融合多尺度的识别运算,故目标图像大小对识别结果影响较弱。实践证明,该方法正确识别率高,鲁棒性强。

关键词 [图像识别](#) [小波](#) [多尺度](#) [Fisher变换](#)

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## A Multiresolution Image Recognition Method Using Fisher Transform and Its Application to Car Type Recognition

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Abstract

This paper introduces a new multiresolution image recognition method. At first, it makes multi-wavelet division over the image, organizes the corresponding components of different resolution into a vector. Then, makes a Fisher transform over the vectors. Recognition is based on the sum of the absolute distance between the vector of the unknown object and the vector of the template or based on the relative distance which is defined as the absolute distance between the vector of the unknown object and that of the template divided by the distance between the vectors of the corresponding templates in the Fisher transformed domain. Because the recognition is mainly dependent on the low frequency component, the method is insensitive noise pixels in the images. Because the recognition procedure has included multiresolution recognizing computation, the right rate of recognition is insensitive to the dimension size of the image in some degree. The practice of the method proves that the right rate of recognition is very high and the robustness of the method is strong.

Key words [Image recognition](#) [Wavelet](#) [Multiresolution](#) [Fisher transform](#)

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