光照鲁棒的抗模糊新组合不变矩图像匹配方法

作　者：刘欢, 郝矿荣, 丁永生, 毛敏

单　位：东华大学

基金项目：国家自然科学基金重点项目

摘　要：

基于特征的传统图像匹配方法对环境光照变化和模糊噪声适应性较差，针对该问题文中提出了一种新组合不变矩。在Hu不变矩的基础上，重新组合构造出三个新组合不变矩并将其应用到图像匹配中。实验结果表明，这种新组合不变矩具有很好的光照鲁棒性和模糊不变性，能够有效地解决受光照变化和模糊噪声共同影响造成的匹配率下降问题；在保证高精度的前提下，匹配效率大大提高。该不变矩作为图像特征的描述形式进行图像匹配是有效可行的，具有良好的参考价值。

关键词：计算机视觉；图像匹配；组合不变矩；光照鲁棒性；模糊不变性

An Image Matching Method of New Illumination-Robust and Anti-blur Combined Moment Invariants

Author's Name:

Institution:

Abstract:

Novel combined moment invariants are put forward to deal with the problem of the poor adaptability to the illumination variation and the blur noise in the cases of the conventional image feature matching. The new combined moment invariants are re-built on the basis of Hu moments and are applied in image matching. The experimental results have demonstrated that, in virtue of its illumination robustness and blur invariance, the proposed approach can effectively overcome the decline of the correct matching rate influenced by both the illumination change and the fuzzy noise. Ensuring the high precision, the matching efficiency is greatly improved. Utilizing the new combined moment invariants as image descriptors to complete image matching is feasible and validate. It offers a nice reference value.

Keywords: computer vision; image matching; combined moment invariant; illumination-robust; blur invariance

投稿时间：**2013-05-28**

查看pdf文件