

论文与报告

轮廓曲线的LoG变换及图像共变区域的检测

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摘要

本文将LoG (Laplacian of Gaussian)变换应用到轮廓曲线上, 其范数的平方具有稳健的曲率特性, 由此构造了轮廓角点的响应函数; 在此基础上, 结合轮廓LoG所检测的角点和角点邻域内轮廓方向的尺度共变性设计了一种新的关于旋转和尺度共变的特征区域检测算法. 最后, 利用相关度准则对多组受干扰的图像进行特征共变区域匹配, 实验结果验证了所提出的共变特征区域检测算法具有计算简单、容易实现和较强的鲁棒性等特点.

关键词 [轮廓曲线](#) [高斯型的Laplace算子](#) [角点](#) [轮廓方向](#) [共变区域](#)

分类号

LoG Transform of Contour Curves and Detection of Image Covariant Regions

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Abstract

In this paper, Laplacian of Gaussian (LoG) of contour curves is applied and its norm square shows a robust curvature feature. So, norm square of contour LoG is defined as the response function of corners. Further, a novel covariant region detector with rotation and scale invariants is designed based on the contour orientation of each point at neighbor of each corner detected by LoG and the corner itself. Finally, matching among image feature covariant regions is performed using cross correlation criterion and the results illustrate that the proposed algorithm has the properties such as simple calculation, easy realization, and better robustness.

Key words [Contour curve](#) [Laplacian of Gaussian \(LoG\)](#) [corner](#) [contour orientation](#) [covariant region](#)

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