

图形、图像、模式识别

基于向量模的坐标变换不变性的碎片匹配方法

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摘要 根据向量模在平移、旋转等坐标变换中具有不变性的特征, 给出了一种新的碎片匹配算法。先对碎片图像进行预处理得到图像边界, 然后计算每条边界曲线上任意两点构成的向量的模(欧式距离), 并按边界点顺序排列向量模值, 比较向量模值, 找出最长的匹配段就是两个碎片的匹配边。在拼接时, 同样根据模的这一特征, 已知点坐标和模值, 解方程组即可求得其余边界点在目标坐标系的坐标。该方法原理简明, 编程容易, 计算速度快。最后通过实验验证了该方法的有效性。

关键词

[碎片匹配](#) [向量模](#) [坐标变换](#) [不变性](#)

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Fragments matching method based on invariance of vector module in coordinate transformation

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Abstract

Based on the vector module's characteristics of invariance of translation and rotation coordinate transformation, a new fragment matching method is brought forward. Firstly, the images of fragments are pretreated in order to get boundaries. Secondly, after calculating the values of vector modules which are composed by every two points in boundaries and arranging them in extracting boundary order, the longest matching segments which are the matching boundaries are found. Finally, also in accordance with the nature of invariants of modules, because some coordinates of points and modules have been known, the rest coordinates of boundary points in target coordinate system are solved based on solution of equations. Experimental results show that the method with simple principle, easy programming and rapid calculation speed is effective.

Key words [fragments match](#) [vector module](#) [coordinates transformation](#) [invariance](#)

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