

论文

## 基于最大化对齐度的多模态图像自动配准

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摘要

该文讨论图像配准的广义定义并提出一种新的图像配准准则—对齐度。对齐度能够正确地反映两幅不同灰度属性的图像是否配准, 并且将图像配准归结为对齐度的最大化。新准则可以用来配准多模态图像包括灰度属性差异很大的图像。该文应用多分辨率方法和Powell方向族搜索法来最大化对齐度。因此, 用该方法可以自动地处理图像配准问题, 不需要定义地标点或特征点。多模态医学图像和遥感图像的自动配准的例子说明了该文方法的有效性。

关键词 [图像配准](#) [对齐度](#) [多模态图像](#)

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## Automatic registration of multi-modal images based on the maximization of the alignment metric

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Abstract

This paper discusses the generalized definition of image registration and proposes a new measure of image registration—the Alignment Metric (AM). This metric can effectively describe the degree of match of two images with different gray level properties. As a result, the problem of image registration is turned into the maximization of the AM. The new criterion can be used to register multi-modal images including the images with different gray level properties. The Powell's direction set method with multi-resolution is used to search for a global maximum of the AM. The images can then be registered automatically without the need of the previously located control points or landmark points. Experiments using multi-modal medical and remote sensing images demonstrate the effectiveness of the method.

Key words [Image registration](#) [Alignment Metric \(AM\)](#) [Multi-modal images](#)

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