

Abstract

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Image registration based on multi-scale SIFT for remote sensing images

Image registration is the step in many application areas such as computer vision, remote sensing and medical image processing. Image registration is achieved by aligning two more images according to the estimated transformation between them. In this paper, we present an image registration algorithm, which combines the multi-scale wavelet transform with scale invariant feature transform (SIFT). First, images are decomposed into multiple scales using wavelet transform (WT), then the low frequency (approximation) image at certain level is input to SIFT algorithm. The proposed algorithm speeds up the calculation of the correspondences between images. Experimental results with different remote sensing images illustrate the accuracy of proposed algorithm.