

عنوان مقاله:

Image Mosaicing based on Adaptive Sample Consensus Method and a Data-Dependent Blending Algorithm

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خلاصه مقاله:

Image mosaicing refers to stitching two or more images that have regions overlapping with a larger and more comprehensive image. The Scale Invariant Feature Transform (SIFT) is one of the most common matching methods previously used in image mosaicing. The de-fects of SIFT are lots of mismatches, that reduce the efficiency of this algorithm. In this article, to solve this problem, a novel approach to image mosaicing is suggested. At first, the features of both images are matched based on SIFT to improve the mosaicing process. Then, the A-RANSAC algorithm suggested in [1] is employed to eliminate mismatches based on an adaptive threshold. This algorithm is used to delete incorrect matches and to improve the accuracy of images mosaicing. Image blending is the final step of mosaicing to blend the intensity of the pixels in the overlapped region to avoid the seams. The suggested approach of blending is based on the absolute Gaussian weighting function. The mean and variance of this function are considered as the average and variance of the data of the range of two images common to each other, respectively. The suggested blending method reduces border line in the combined images while preserving the information of the original images as much as possible, performing the mosaicing process better. The simulation results of the suggested image mosaicing technique, which includes the use of SIFT algorithm, A-RANSAC, and suggested image blending algorithm on the standard image databases and the created image database, show the superiority of the suggested approach according to median error criteria, precision

کلمات کلیدی:

A-RANSAC, blending method, Image Mosaicing, Incorrect matches, SIFT

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