

عنوان مقاله:

Image fusion for the aim of improving image quality with combination of LP and DWT

محل انتشار:

سومین کنفرانس ملی پژوهش های نوین در مهندسی و علوم کاربردی (سال: 1400)

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خلاصه مقاله:

Image fusion is a process through which the information of different scenes of an image are combined and the resulted image is more accurate than the original image. To produce such accurate images we need high quality lenses but such lenses suffer from problems such as limited depth-of-focus and they are extremely expensive. As a result, providing an image which has an accurate focus in all details is difficult and expensive. Therefore, image fusion with discrete wavelet transform and Laplacian Pyramid (LP) is used through which images with different focus are combined and a high quality image is achieved. This fusion process is called multi-focus image fusion. This process includes three steps. First, the multi-focus image is decomposed to different levels by LP. Next, at each level of the pyramid, inverse wavelet transform is applied. Finally, the output image of the previous step is reconstructed using inverse LP so that the fused image can be created in LP. The results of the study, evaluated with fusion efficiency and average gradient show that the proposed method provides better results in comparison with other similar methods

کلمات کلیدی:

Image fusion, discrete wavelet transform, multi-focus images, laplacian pyramid

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