

Abstract

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Image Denoising Using Non-Local Means Algorithm and Subbands Mixing

In this paper, an image denoising technique using non-local means algorithm and subbands mixing is proposed. The non-local means algorithm is applied to the noisy image twice with two different spatial filtering parameters then either discrete wavelet transform (DWT) contourlet transform (CT) is applied to the two resultant images of the non-local means algorithm, then a subbands mixing is performed to maximize the peak signal to noise (PSNR). The improvement achieved using the proposed technique is about 0.65 dB. Both wavelet and contourlet transforms are used where their improvements are closed to each other and which of them is better varies according the input noisy image.