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## Abstract

In digital image different kinds of noises exist in an image and a variety of noise reduction techniques are available to perform de-noising. Selection of the de-noising algorithm depends on the types of noise. Gaussian noise, speckle noise, salt & pepper noise, shot noise are types of noises that are present in an image. The principle approach of image de-noising is filtering. Available filters to de-noise an image are median filter, Gaussian filter, average filter, wiener filter and many more. A particular noise can be de-noising by specific filter but multilevel noise are challenging task for digital image processing. In this paper we propose a median filter based Wavelet transform for image de-noising. This technique is used for multilevel noise. In this paper three noise model Gaussian noise, Poisson noise and salt and pepper noise for multilevel noise have been used. In the end of paper we compare our technique with many other de-noise techniques.

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### Index Terms

Computer Science

Signals And System

### Keywords

Gaussian noise   Multilevel noise   Threshold   Wavelet transform   Threshold ratio  
Poisson noise

