Abstract

Image denoising is a traditional yet essential issue in low level vision. Existing denoising technique denoise image but these techniques doesn’t concern about multiplicative noise removals. Due to that image texture are not preserved and PSNR value does not properly improved. Image denoising technique uses a novel Gradient Histogram Preservation (GHP) algorithm which preserves image quality. Presently, this technique denoises only additive noise removal. It cannot be applied to non-additive removal, such as multiplicative, Poisson noise and signal-independent noise and it also takes more time in calculations. Since both the noises are dissimilar in nature therefore it is difficult to eliminate both the noises by using single filter. To solve the above issue, in this paper a novel GHP approach is used to remove additive white Gaussian noise (AWGN) effectively. Since speckle noise is multiplicative in nature; it is converted into additive noise by logarithmic transformation method before apply GHP algorithm. In this paper we use the approach that is to acquire a logarithmic transformation, calculate a covariance matrix of the transformed data, generate random number which follows mean zero and variance/covariance c times the variance/covariance computed in the previous step, then
Additive and Multiplicative Noise Removal by using Gradient Histogram Preservations Approach

take antilog of the normalized data and apply novel technique using, Fast Fourier Transfer (FFT), Gaussian filter, local content metrics texture ,Iterative Histogram Specifications (IHS) which can denoise both types of noise removal, additive and non-additive noise removal and also takes less calculation time. In image processing FFT is used in a wide variety of applications, like image analysis, image reconstruction, image filtering and image compression. Gaussian separating is utilized to obscure pictures and evacuate clamor. The proposed algorithm offers to remove the multiplicative noise and improves the visual quality of images.

References

PROCESSING, VOL. 19, NO. 12, DECEMBER 2010.


Index Terms

Computer Science  Signal Processing

Keywords

Multiplicative noise, Texture, histogram specifications, sparse matrix representations, local content matrix