Abstract

Though, there has been an enormous research contribution on image de-noising methods which are also called as image enhancement methods that actually enhance the desired information and suppress unwanted portion in a digital image. However, robustness is still a major challenge in this area of digital image processing. The performance has been improved by several research papers using fuzzy approaches. This work proposed a non-linear method for removing impulse noise, that is salt and pepper noise in digital grayscale images. The modified fuzzy based decision algorithm (MFBDA) is used. The noisy pixels are detected and then fuzzy based filtering works to correct the pixel. The proposed method performs better than
conventional and other non-linear fuzzy based image enhancement methods. The values of statistical parameters such as PSNR (Peak signal-to-noise ratio), IEF (Image Enhancement factor), IQI (Image quality index) and SSIM (Structural similarity index) were obtained better as compared to conventional fuzzy filters.

References

Index Terms

Computer Science  Image Processing

Keywords