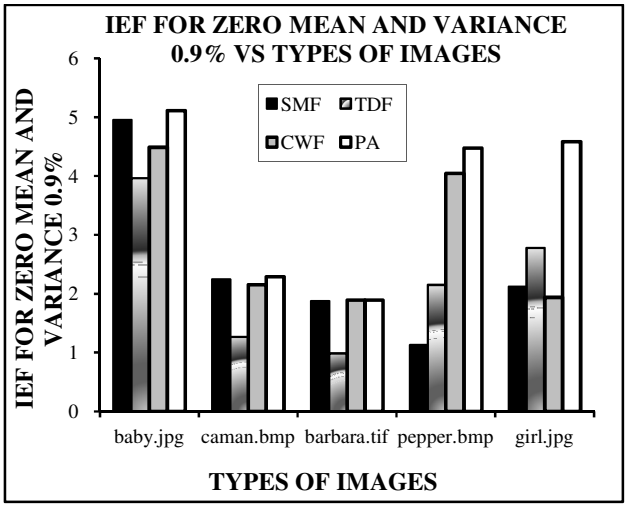


Fig.16. IEF for various filters applied over different images corrupted by zero mean and 0.9% variance Gaussian noise

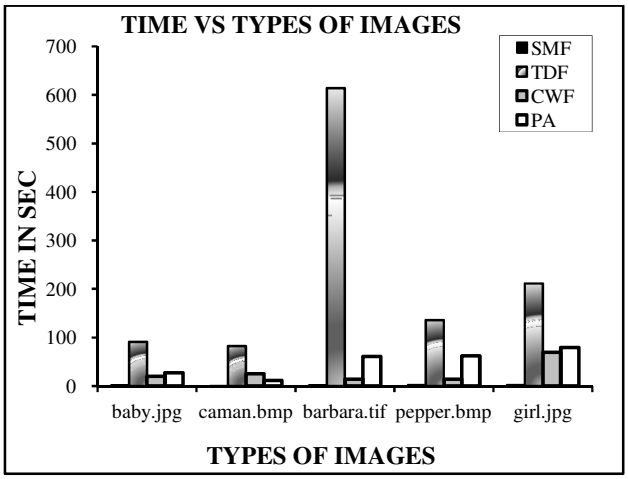


Fig.17. TIME for various filters applied over different images corrupted by zero mean and 0.9% variance Gaussian noise

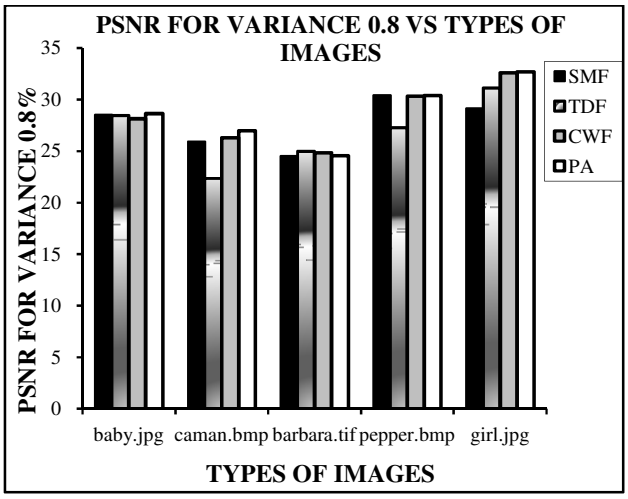


Fig.18. PSNR for various filters applied over different images corrupted by 0.8% variance Speckle noise

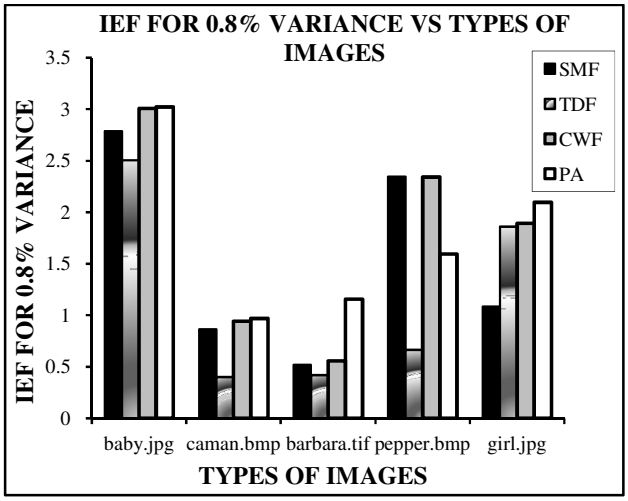


Fig.19. IEF for various filters applied over different images corrupted by 0.8% variance Speckle noise

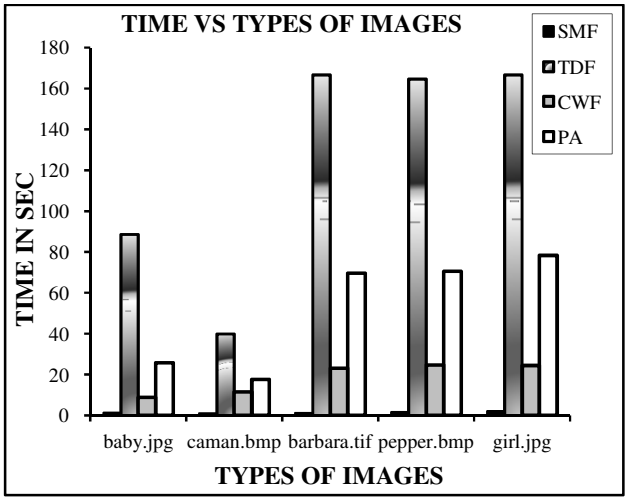


Fig.20. TIME for various filters applied over different images corrupted by 0.8% variance Speckle noise

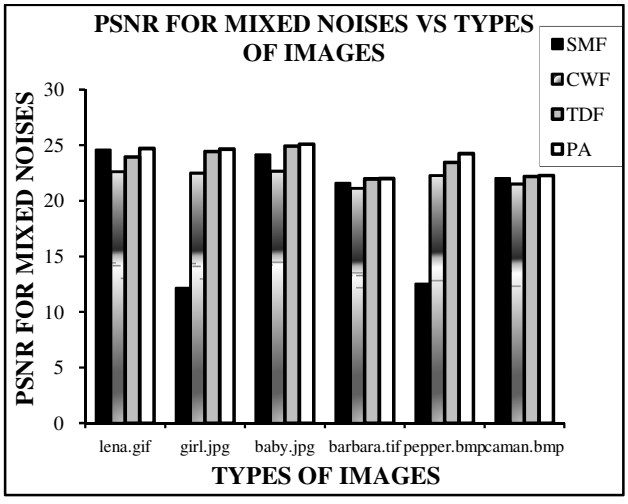


Fig.21. PSNR for various filters applied over different images corrupted by 20% impulse noise, 0.9%variance Gaussian noise

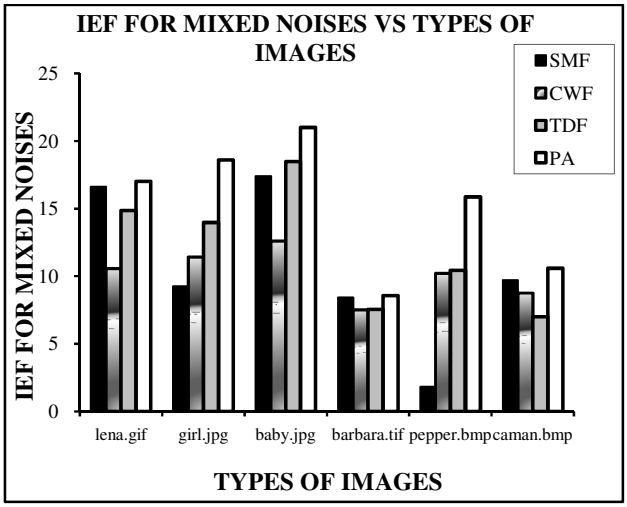


Fig.22. IEF for various filters applied over different images corrupted by 20% impulse noise, 0.9%variance Gaussian noise

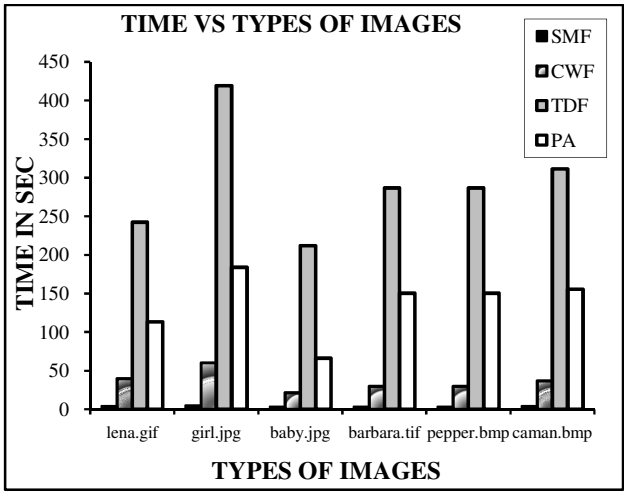


Fig.23. TIME for various filters applied over different images corrupted by 20% impulse noise, 0.9%variance Gaussian noise

(a) (b) (c) (d) (e) (f)

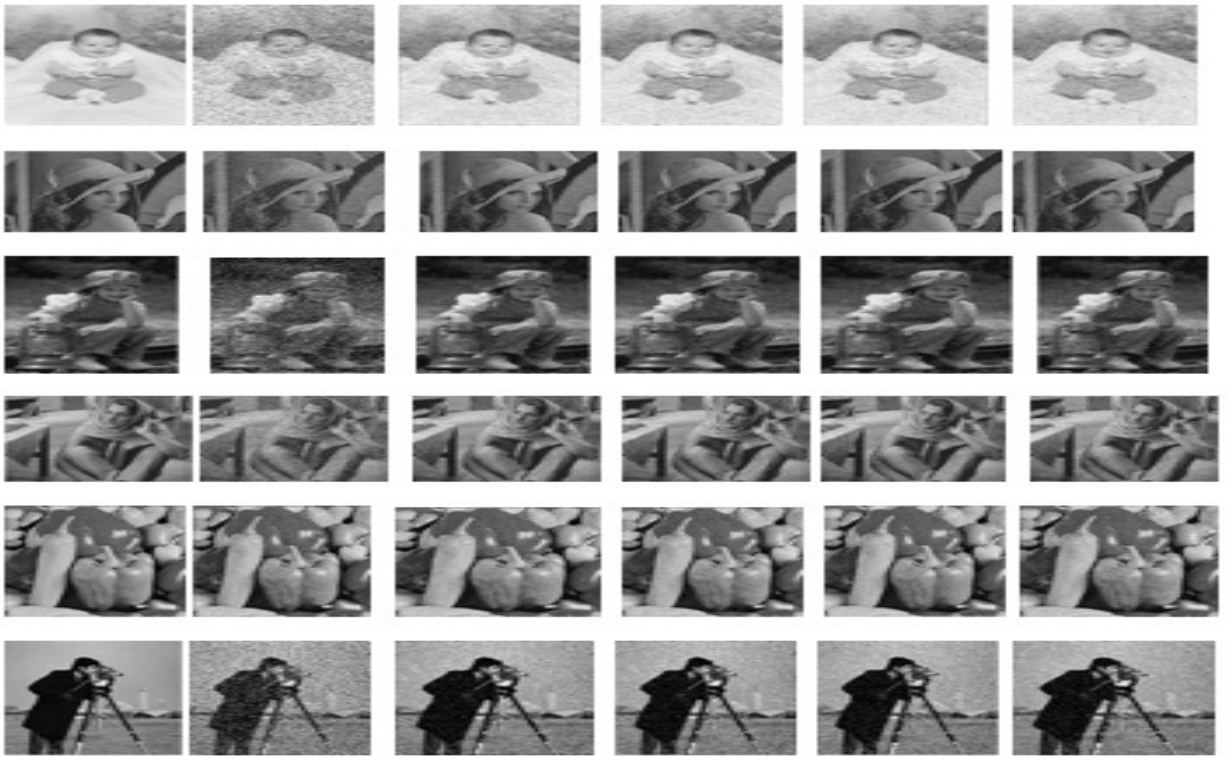
Fig.24. Cameraman.bmp, Barbara.tif, lena.gif (a) original image (b) impulse noise affected from by 30% (c) images restored by SMF (d) images restored from by TDF (e) images restored by CWF (f) images restored by proposed algorithm

(a) (b) (c) (d) (e) (f)

Fig.25. Cameraman.bmp, Barbara.tif, lena.gif (a) original image (b) Zero mean and 0.9% variance Gaussian noise (c) images restored by SMF (d) images restored from by TDF (e) images restored by CWF (f) images restored by proposed algorithm

(a) (b) (c) (d) (e) (f)

Fig.26. Cameraman.bmp, Barbara.tif, lena.gif (a) original image (b) 0.8% variance Speckle noise (c) images restored by SMF (d) images restored from by TDF (e) images restored by CWF (f) images restored by proposed algorithm



(a) (b) (c) (d) (e) (f)

Fig.27. Barbara.tif, pepper.bmp, lena.gif, Cameraman.bmp, baby.jpg, girl.jpg (a) original image (b) Impulse noise 20% plus zero mean 0.9% variance Gaussian noise (c) images restored by SMF (d) images restored from by CWF (e) images restored by TDF (f) images restored by proposed algorithm

5. CONCLUSION

From the exhaustive experiments, conducted for different noise types for different images for different median filters, we conclude that, the highest PSNR (dB) and IEF is not obtained for PA for different images and for different noise type. However, on overall basis, i.e., in an average sense, PA gives good performance for low density impulse noise up to 20%, zero mean 0.9% variance Gaussian noise removal. When compared to their class of decomposition filters such as TDF in specific, the PA exhibits better performance for Salt & Pepper noise removal up to 30% and reduces smaller proportion of zero mean 0.9% variance Gaussian noise. The proposed filter also exhibits good noise removal up to 0.8% speckle noise. In our method, time complexity of Threshold Decomposition is removed by considering the pixel intensity itself as threshold. Hence, the proposed method shows good performance with fewer complexities. The Proposed algorithm has good average computation time such that it's twice faster in comparison to TDF and exhibits optimum computation speed when compared with other filters.

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