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DENOISING OF MEDICAL IMAGES USING IMPROVEDMEDIAN FILTER

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***Abstract* —** *In the transmission of medical images over channels, Images are corrupted by salt and pepper noise, due to faulty communications. Salt and Pepper noise is also referred to as Impulse noise. The objective of denoising is to remove the impulses so that the noise free image is fully recovered with minimum signal distortion.*

Image denoising is an important image processing task, both as a process itself, and as a component in other processes. The main properties of a good image denoising model are that it will remove noise while preserving edges. In general non linear digital filters like Mean, Median filters are used for denoising. Medical images have less contrast and less brightness, so, denoising of medical images is quite complex compared to general images. An improved median filter algorithm is implemented for restoration of degraded images and edge preservation. Fundamentals of image processing, image degradation and restoration processes are illustrated. The pictures are corrupted with salt and pepper noise and reconstructed.

To evaluate the performance of this technique, we used to calculate MSE, PSNR and SSIM. The improved median filtering based enhancement give good results when compared with existing techniques like Mean and Median filtering techniques.

Key words: *Medical Image, Denoising, Median Filter, Salt & Pepper Noise.*