Abstract

Medical images are corrupted by noise during their acquisition and transmission. Image denoising involves manipulation of the image data to produce a visually original quality image. The ultimate goal of medical image denoising technique is to compromise between the noise suppression and preservation of image details. The best possible information is required by the clinician for an accurate diagnosis. It has become an essential exercise especially in the Magnetic Resonance Imaging (MRI). In this work, we have taken magnetic resonance images infected with salt and pepper noise and have used three different de-noising techniques namely median filter, adaptive median filter, and a nonlinear cascade filter. All the three filters are used to reduce image noise at different densities and their Peak Signal to Noise Ratios (PSNR) are compared. This experimental analysis helps us increase the accuracy of MRI for easy diagnosis and determine which filter might be best suited for rectification of corrupted MRI.
Performance Analysis of Impulse Denoising Techniques in Magnetic Resonance Imaging

References


Index Terms

Computer Science

Control Systems
Keywords

Medical Resonance Imaging, Median filter, Adaptive filter, Nonlinear cascade filter, PSNR.