Abstract

Feature extraction and object recognition plays important role in medical image, acquired by various imaging modalities. Medical image is taken by various technologies like MRI machine, computed tomography (CT), positron emission tomography (PET) etc. These techniques always add noise in image. Which should be removed for feature extraction and object recognition of medical image? This noise will change the phase and amplitude of every pixel in the image. So image restoration becomes essential task for perfect diagnostics of body. This noise can be reduced if phase error at each pixel in complexes valued image is known, resulting in improved detection of medically significant detail. But estimation of phase error at each pixel is difficult task. There are so many approaches, which have been previously suggested for image restoration. Here we are comparing the code wavelet method with intensity averaging Gaussian blur method and we will prove that later method is giving good result. Here we are applying no. of iterations to modify the estimate of phase error at pixel, until output converges to a stable estimate. We are using image diffusion and anisotropic method to estimate phase error at each pixel and convolution and Gaussian blurring method for amplitude correction. We are using the PSNR(Peak signal to noise ration),MSE(Mean square error) and RMSE(Root
mean square error) as performance matrices to measure the quality of denoised MRI. The final result shows that this method is effectively removing the noise while preserving the edge and fine information in the images.

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Index Terms

Computer Science Signal Processing

Keywords

MRI Random noise iteration Gaussian blur convolution PSNR MSE Image denoising