

Improvement of Bone Scintigraphy Image Using Image Texture Analysis

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Abstract : Image enhancement allows the observer to see details in images that may not be immediately observable in the original image. Image enhancement is the transformation or mapping of one image to another. The enhancement of certain features in images is accompanied by undesirable effects. We proposed that to achieve maximum image quality after denoising, a new, low order, local adaptive Gaussian Scale Mixture model and median Filter were presented, which accomplishes nonlinearities from scattering a new nonlinear approach for contrast enhancement of bones in bone scan images using both Gamma Correction and negative transform methods. The usual assumption of a distribution of Gama and Poisson statistics only lead to overestimation of the noise variance in regions of low intensity but to underestimation in regions of high intensity and therefore to non-optimal results. The contrast enhancement results were obtained and evaluated using MatLab program in nuclear medicine images of the bones. The optimal number of bins, in particular the number of gray-levels, is chosen automatically using entropy and average distance between the histogram of the original gray-level distribution and the contrast enhancement function's curve.

Keywords : Bone scan, nuclear medicine, Matlab and Image Processing Technique