Evaluation of performance for different filtering methods in CT brain images

ABSTRACT

This paper presents the comparison of filtering methods for a contrast enhancement of computed tomography (CT) brain images. Each method consists of three filter consecutively which is a combination of the low order linear filter such as Gaussian filter, disk filter, average filter and median filter with an adaptive filter method and unsharp filter. The process starts with filtering the CT brain image using low order linear filter, then proceeds with adaptive averaging filter and ends with unsharp filter. In this paper, there are two criteria, peak signal to noise ratio and mean square error, that were adopted for performance assessment. Our preliminary results showed that the combination of Gaussian filter with adaptive filter and unsharp filter gives the good result in removing the noise and edge detection. This method improved the CT brain image and the gyri and sulci can be easily identified.

Keyword: CT brain images; computed tomography brain images; Filtering method