Abstract

This paper presents a method to assess and classify the textural abnormalities created by the cellular changes made available through digital radiographs. In this process, digital X-ray images of the spine were subjected to investigations. A study has been made to choose the optimum set of features selectively to train the classifier.

In most common applications, the feature vector is extracted from the image data using pixel intensity and magnitude of the frequency displayed as an image. In this case, the introduction of the phase angle of the frequency involved in generating the hue of the suspicious lesions considerably enhanced the success rate of the detection (approximately by 25%).

Our experimental study based on 32 subjects indicates that the proposed system is successfully classifying the abnormal regions with 94.37% mean Correct Classification Ratio (CCR). Here, CCR is defined as correctly classified samples versus all the samples.


Index Terms

Computer Science

Information Sciences
Keywords

Classification, Segmentation, Computer-aided detection (CAD), Spinal Tuberculosis (TB).