IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 5, April 2024

# X-Ray Image Enhancer

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**Abstract:** *The DR (digital radiography) images may be obscured due to noise interference, improper exposure, and the excessive thickness of human tissues, resulting in indistinct edges and reduced contrast. An image-enhancement algorithm based on wavelet multiscale decomposition is proposed to address the shortcomings of existing single-scale image-enhancement algorithms. The proposed algorithm is taking advantage of the interpolation, smoothness and normalization properties. Next a multiscale interpolation wavelet operator is constructed to divide the image into several sub-images from high frequency to low frequency, and to perform different multi-scale wavelet transforms on the detailed image of each channel. So that the most subtle and diagnostically useful information in the image can be effectively enhanced. Moreover, the image will not be over-enhanced and combined with the high contrast sensitivity of the human eye's visual system in smooth regions, different attenuation coefficients are used for different regions to achieve the purpose of suppressing noise while enhancing details.*

**Keywords:** DR (digital radiography), noise interference, image-enhancement, high frequency, high contrast

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