Jordan University of Science and Technology

Embedded ROI coding of mammograms via combined SPIHT and integer wavelet transforms

Authors: Imad Zyout, Ikhlas Abdel-Qader and Hazem Al-Otum

Abstract: In this paper, we investigate embedded region of Interest (ROI) image coding of mammograms. This coding algorithm is based on combining Set Partitioning in Hierarchical Trees (SPIHT) scheme and reversible wavelet transforms. We will show that this combination produces both progressive and perfect reconstruction features. The benefit of such approach is that it offers the possibility of compressing ROI with high fidelity up to lossless and at early stages of the decoding process. This allows receiving ROI data with high fidelity at low bit rates while transmitting over PACS network. The results show that proper selection of reversible wavelet transforms is a significant element in ROI image coding. All Mammograms are from MIAS database of which we included normal mammograms and abnormal ones with various types of abnormalities.