

Reversible and Adaptive Watermarking for MRI Medical Images

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Abstract : A new medical image watermarking scheme delivering high embedding capacity is presented in this paper. Integer Wavelet Transform (IWT), Companding technique and adaptive thresholding are used in this scheme. The proposed scheme implants, recovers the hidden information and restores the input image to its pristine state at the receiving end. Magnetic Resonance Imaging (MRI) images are used for experimental purposes. The scheme first segment the MRI medical image into non-overlapping blocks and then inserts watermark into wavelet coefficients having a high frequency of each block. The scheme uses block-based watermarking adopting iterative optimization of threshold for companding in order to avoid the histogram pre and post processing. Results show that proposed scheme performs better than other reversible medical image watermarking schemes available in literature for MRI medical images.

Keywords : adaptive thresholding, companding technique, data authentication, reversible watermarking

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