Wavelet Analysis in Video Watermarking through Wavelet Transform Scheme

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Abstract

Intellectual and copyright protection is one of the major issues faced by copyright owners. Easy access to Internet and all the digital media such as audios, images, digital documents and videos, poses great threat to copyright owners as their work gets manipulated, forged, redistributed conveniently through illegal means. As an effective solution to this problem, concept of Digital Watermarking has been used. Watermarks can be of the form images, text, binary logos, signatures, and numbers. They are used for storing information about the copyright owner, source of data, and authentic users. In the proposed work, video watermarking technique has been shown highlighting comparative analysis of db wavelets based on different quality parameters. Each of the db wavelets is applied on the randomly selected frames from the input coloured video using random number that works as a key for the proposed extraction algorithm. It is shown that not all db wavelets support watermarking scheme. Out of 45 wavelets, 12 db wavelets were applicable for watermarking. The original watermark image and the extracted watermark image are then used as the basis against various quality parameters to check if the imperceptibility of the watermark is retained after watermark extraction. The
proposed watermarking scheme is imperceptible against various quality parameters such as Peak-signal-to-noise ratio, Mean-square error, maximum difference, and normalized absolute error.

References

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