A Hybrid Video Watermarking Technique based on DWT, SVD and SCHUR Decomposition

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 179
Number 9

Year of Publication: 2018

Authors:
Ananya Adhikari, Mihir Sing

Abstract

Video watermarking is a technique that used to protect the multimedia data, video in reference to authentication, proof of ownership, copy control etc. In this paper a robust video watermarking scheme is proposed that will protect videos from being unauthorized manipulation by the intruder. A hybrid transform technique consists of Discrete Wavelet Transform (DWT), Schur decomposition, Singular Value Decomposition (SVD) and a visual attention region determination scheme is used to determine the region of interest and region of non interest blocks of video frames. To make the scheme robust, watermark is embedded in the region of non interest blocks of HL band of the frame. The robustness against various attacks has been compared with high Normalized Cross Correlation (NCC) values and the imperceptibility of the watermarked image with the original cover image has been compared with indicated high achievable Peak Signal to Noise Ratio (PSNR) values. The experimental results show that the proposed method has achieved a satisfactory performance against various notable attacks.

References
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**Index Terms**

Computer Science  
Security

**Keywords**

Discrete wavelet Transform (DWT), Schur Decomposition, Singular Value Decomposition (SVD), Visual Attention Region.