A Variance based Approach (VBA) Digital Watermarking in Frequency Domain and Comparative Analysis

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Abstract

The paper introduces a Digital Image Watermarking technique based on Transform domain. The purpose of doing the watermarking in transform domain is to give more robustness in the watermarking process looking into its fast real time implementation and also the computational complexity which comes often in the implementation process. In the proposed algorithm, a binary watermark is embedded in a grayscale image (cover image). The cover image is segregated into blocks of high and low variances. The cover image is transformed into frequency domain and comparative higher variance blocks are considered for embedding the binary watermark. Integer portion of the transformed DC co-efficients of the considered blocks undergoes binary conversion and binary bits of watermark are embedded in those co-efficients. Both Walsh Transform and Walsh Hadamard transform are used for frequency domain conversion of the image and to make a comparative study as well. Software simulation of the algorithm is done using MATLAB

References


6. Ravi Shah, Abhinav Agarwal and Subramaniam Ganesan, Department of Computer Science and Engineering, Oakland University, MI-48309, Frequency Domain Real Time Digital Image Watermarking, Page 1-6


10. Patrick Gaydecki, Kamal A. Ahmed and Hussain Al Ahmad, A Blind Block Based DCT Watermarking Technique for Gray Level Images Using One Dimensional Walsh Coding, Pages 1-5

11. D.Sasikala and R. Neelaveni, Correlation Coefficient For Registration Of Monomodal Brain Images Using Fast Walsh Hadamard Transform, ICCCCT’10, Pages 1-6

12. Patrick Gaydecki, Kamal A. Ahmed and Hussain Al Ahmad, A Blind Block Based DCT Watermarking Technique for Gray Level Images Using One Dimensional Walsh Coding, Pages 1-5


14. Fu Jun and Wang Shou-huai, An adaptive spread spectrum watermarking algorithm based on Orthogonal Walsh codes, Pages 1-3


16. Kamal A. Ahmed, Hussain Al-Ahmad and Patrick Gaydecki, Robust Image Watermarking Using Two Dimensional Walsh Coding, Pages 1-5


Index Terms

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Keywords

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