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On

WATERMARKING SCHEME FOR MULTIPLE IMAGES

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Submitted by

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I hereby declare that the work presented in this dissertation entitled **"WATERMARKING SCHEME FOR MULTIPLE IMAGES"** has been carried out by me under the guidance of **Dr.Nidhi Goel**, Assistant Professor, Department of Electronics & Communication Engineering, Delhi Technological University, Delhi and hereby submitted for the partial fulfillment for the award of degree of Master of Technology in Signal Processing & Digital Design at Electronics & Communication Department, Delhi Technological University, Delhi.

I further undertake that the work embodied in this major project has not been submitted for the award of any other degree elsewhere.

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ABSTRACT

Always,the copy of any digital image is similar to the original. This has in many instances, laid way to the use of content of the digital image with malicious intent. So in order to protect any multimedia data against recording and transmitting illegally is to embed a digital signature or copyright label or watermark that acts on behalf of the owner of the data. These schems i.e,Data hiding, to embed secondary data in digital media, is making considerable progress in recent years and attracted attention from both academia and industry. Many Techniques have been developed for many applications, i.e,ownership protection, also their authenthication and access control. Some of the data hiding applications are Imperceptibility, having robustness against moderate processing such as compression, and the ability to hide many bits are the basic but rather conflicting requirements for many data hiding applications. For example, a visible "seal" placed over the image to identify the copyright of a person.

We have worked on Color image compression and Watermark embedding laid on Block Truncation Coding (BTC) together with Parity checking.Unlike others, the proposed method do not bring considerable changes in the original image during watermark casting.Instead of that watermarkis added during the compression of the original image. First of all, we convert the input image from RGB plane to the NTSC (YIQ) plane. That means the image is transformed to two planes namely-luminance and chrominance . Then we divide Y plane into non-overlapping blocks and each block is coded by Y1&Y2, the representative planes and also a Bit map,hence for the planes I &Q, and we obtain the Bitmap and representative values.we add the watermark to the bit map by means of parity check and alteration. To confirm the robustness we put attacks to the output image obtained and by extracting the watermark information from the attacked image.

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LIST OF ABBREVIATIONS

BTC	-	Block Truncation Coding
HVS	-	Human Visual System
NTSC	-	National Television System Committee
LSB	-	Least Significant Bit
DCT	-	Discrete Cosine Transform
DWT	-	Discrete Wavelet Transform
HDTV	-	High Definition Digital Television
MSE	-	Mean Squared Error
PSNR	-	Peak Signal to Noise Ratio
RMSE	-	Root Mean Squared Error
MAE	-	Mean Absolute Error
SNR	-	Signal to Noise Ratio
UQI	-	Universal Quality Index
BER	-	Bit Error Rate