MES COLLEGE OF ENGINEERING-KUTTIPPURAM
DEPARTMENT OF COMPUTER APPLICATIONS
20MCA246 - MAIN PROJECT

PRO FORMA FOR THE APPROVAL OF THE FINAL SEMESTER PROJECT

(Note: All entries of the pro forma of approval should be filled up with appropriate and complete information. Incomplete Pro forma of approval in any respect will be rejected.)

Project Proposal Number : _____
(Filled by the Department)

E-Mail nidhapoozhikal@gmail.com

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Roll Number 35

Register Number MES21MCA-2035

1. Name of the Student (in BLOCK LETTERS) : **NIDHA POOZHIKAL**
2. Name of the Organization : MES COLLEGE OF ENGINEERING, KUTTIPPURAM
3. Address of the Organization _____

Telephone No. : _____ Company Email : _____

4. Name of the External Guide : _____

Mobile No. : _____ E-Mail : _____

1. Title of the Project : IMAGE WATERMARKING BASED ON VISUAL CRYPTOGRAPHY AND IMAGE FUSION
2. Name of the Guide : Mr. Balachandran KP

Date : 10-02-2023 Signature of the Student: Nidha

Comments of The Project Guide

Initial Submission :

Approval Status : Approved / Not Approved Dated Signature of Guide HOD

First Review :

Second Review :

Comments of The Project Coordinator

Initial Submission: Approved

First Review

Second Review
Coordinator

Dated Signature of Project Co-ordinator

IMAGE WATERMARKING BASED ON VISUAL CRYPTOGRAPHY AND IMAGE FUSION

NIDHA POOZHIKAL
MES21MCA2035

ABSTRACT

A watermark is a pattern, text, or logo, which is intentionally superimposed onto another image to make ensure the image is copied or used with the permission of its original owner. The privacy protection of images is done by watermarking. Similarly, zero-watermarking is a blind digital watermarking method. This method has bought the algorithm to the point where the robustness and the imperceptibility can arrive at a good balance. It is an algorithm to construct watermarks extracting stable feature information from given data. The proposed system is a modified version of the zero-watermarking algorithm.

The multiple images zero watermark algorithm fails to protect all the images in the image set. And the repetition of operations will reduce the efficiency of the algorithm. The zero-watermark algorithm for multiple images based on visual cryptography and image fusion is proposed with a reasonable copyright protection scheme according to the number of images in the set. It reduces the cost of time and storage and also solves the problem of the high computational complexity of existing watermarking algorithms.

The easy distribution of data through the internet and the wide availability of powerful image processing tools for editing, duplicating, altering, etc., made it difficult to protect the originality, prove their ownership, prevent misrepresentation, unauthorized use, misappropriation for the authorized users or owners of image data.

Aiming the above problems, the proposed algorithm uses the gray-weighted average image fusion method to fuse the standard image set which is normalized using image processing from the original images into one image. The Lifting the Wavelet Transform-Quick Response (LWT-QR) decomposition is applied to the effective area selected from the fusion image to obtain the best and strong feature image. By encrypting an image with non-extended visual cryptography, two shared images, a secret shared image, and a public shared image can be obtained. A zero-watermark image can be acquired by performing the XOR manipulation on the public shared image and the feature image.

The zero-watermark verification of the image set can also be done parallelly with this method. For the verification, the feature image is XOR manipulated with the zero-watermark image which can recover the public share image. This public share image can be performed non-extended visual cryptography with the secret shared image to produce the encrypted image.

The newly proposed method is expecting a strong ability for tampering detection, and better performance in combating various attacks, including cropping, Gaussian noise, median filtering, image enhancement attacks, etc. Although the color image can be converted to grayscale images, applying this method to multi-channel color images is difficult.

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Balachandran. K P
Proj Guide.