IJHRMOB

International Journal of HRM and Organizational Behavior

www.ijhrmob.com

editor@ijhrmob.com

International Journal of
HRM and Organizational Behavior
ISSN 2454 - 5015

WATER MARKING IMAGES

[1]Mrs. S KAYALVIZHI,[2]BEESU SAI TEJA,[3]BHUKYA RAJESH,[4]AKULA SAI VENKATA MAHITH,[5]B MAHESH GOUD

[1]Assistant Professor,Department Of CSE,Malla Reddy Institute Of Engineering And Technology(autonomous),Dhulapally,Secundrabad, Telangana, India,degondapushpa@gmail.com

[2,3,4,5]UG Students, Department Of CSE,Malla Reddy Institute Of Engineering And Technology(autonomous),Dhulapally,Secundrabad, Telangana, India.

ABSTRACT

The growth of networked multimedia systems has magnified the need for image copyright protection. One approach used to address this problem is to add an invisible structure to an image that can be used to seal or mark it. These smctures are known as digiral watermarks. In this paper we describe two techniques for the invisible marking of images. We analyze the robustness of the watermarks with respect to linear and nonlinear fillering, and JPEG compression. The results show that our watermarks detect all but the most minute changes to the image.

I.INTRODUCTION

The "Watermarking Images" project aims to address the crucial need for protecting digital images from unauthorized use and distribution. In today's digital age, with the widespread sharing of images on various online platforms, the risk of copyright infringement and intellectual property theft has become a significant concern for photographers, artists, and content creators. Watermarking provides a robust solution to this problem by embedding subtle, visually imperceptible marks or identifiers directly into images, thereby establishing ownership and deterring unauthorized usage. This project focuses on developing efficient and reliable algorithms for watermarking images, ensuring that the embedded watermarks are resistant to tampering and removal while preserving the visual quality of the original image. By implementing advanced techniques from the fields of image processing, cryptography, and data hiding, the project seeks to provide content creators with a valuable tool for safeguarding their intellectual property rights and maintaining control over the dissemination of their work. Through

this project, we aim to contribute to the broader efforts to promote digital rights management and foster a culture of respect for intellectual property in the digital ecosystem.

II.EXISTING SYSTEM

One question that needs to be addressed is how robust is the watermark to typical image processing operations. The first experiment examines the effect of mean and median filtering on forgery detection. The test image consists of a 768 x 512 pixel grayscale image. The watermark block size was chosen to be 256 x 256 pixels. An m-sequence with a period of 65,535 with a single zero bit appended to the end of the sequence was used. It was segmented into 256 bit sections, then arranged row by row to form the watermark block. A 3 x 2 array of these blocks formed the watermark, which covered the entire image. Three different window sizes for each type of filter were applied to two regions in the image. The goal was to see if the watermark could be used to detect these alterations to the imageOne question that needs to be addressed is how robust is the watermark to typical image processing operations. The first experiment examines the effect of mean and median filtering on forgery detection. The test image consists of a 768 x 512 pixel grayscale image. The watermark block size was chosen to be 256 x 256 pixels. An m-sequence with a period of 65,535 with a single zero bit appended to the end of the sequence was used. It was segmented into 256 bit sections, then arranged row by row to form the watermark block. A 3 x 2 array of these blocks formed the watermark, which covered the entire image. Three different window sizes for each type of filter were applied to two regions in the image. The goal was to see if the watermark could be used to detect these alterations to the image.

Disadvantages of existing system

1) Less accuracy

2)low Efficiency

III.PROPOSED SYSTEM

The previous watermarking technique was revised to improve security and localization. Localization is the ability to identify where in the image any changes have occurred. The block size is 8 x 8 pixels, and each block is formed as follows.

1. . A large span m-sequence (n = 96) is generated with the first 128 bits skipped.

ISSN 2454 - 5015

2. The next 64 bits are inserted in the first block of the watermark column by coZumn. The next 32 bits are skipped.

Table 1. δ after mean and median filtering.

Filter size:	*3 x 3*	*7 x 7*	*11 x 11*
	Mean Filter		
δ , Region 1	201	279	288
% of block size	0.31 %	0.43 %	0.44 %
δ , Region 2	11562	12550	13055
% of block size	17.6 %	19.15 %	19.92 %
	Median Filter		
δ , Region 1	205	267	351
% of block size	0.31 %	0.41 %	0.54 %
δ , Region 2	11297	12914	13208
% of block size	17.24 %	19.71 %	20.15 %

Advantages of proposed system

1) High accuracy

2)High efficiency

IV.LITERATURE REVIEW

1.Image Water Marking using DWT to Encapsulate Data in Medical Image,K. Sakthidasan Sankaran; H. Abhi Rayna; Vaishnavi Mangu; V. R. Prakash; N. Vasudevan,At present various watermarking techniques are in use in the field of digital images. The medical image watermarking creates a greater degree of the distortion as a result of the embedded image, which is a big challenge in the medical applications as it affects the decision making process. Certain watermarking technique results vary with different images and also the performance seems to be inconsistent when various images are considered for watermarking. The key point of this work is to enhance the quality and security in order to accomplish distortion free watermarking by utilizing a watermarking technique which subject to pixel weight. For this 2 level DWT is used to obtain the best region for embedding for which the dragonfly optimization algorithm is applied.

2.Water Quality Assessment with Thermal Images,Naima Khan; Nirmalya Roy,Water contamination has been a critical issue in many countries of the world including USA. Physical, chemical, biological, radio-logical substances can be the reason of this contamination. Drinking water systems are allowed to contain chlorine, calcium, lead, arsenic etc., at a certain level. However, there are expensive instruments and paper sensors to detect the quantity of minerals in water. But these instruments are not always convenient for easy determination of the quality of the sample as drinking water. Different minerals in the water reacts to heat heterogeneously. Some minerals

(i.e., arsenic) stay in the water with noticeable amount even after reaching to boiling point. However, it requires cheaper and easier process to examine the quality of water samples for drinking from different sources. With this in mind, we experimented few water samples from different places of USA including artificially prepared samples by mixing different impurities. We investigated their heating property with the sample of marked safe drinking water. We collected thermal images with 10-seconds interval during cooling period of hot water samples from the boiling point to room temperature. We extracted features for each of the water samples with the combination of convolution and recurrent neural network based model and classified different water samples based on the added impurity types and sources from where the samples were collected. We also showed the feature distances of these water samples with the safe water sample. Our proposed framework can differentiate features for different impurities added in the water samples and detect different category of impurities with average accuracy of 70%.

3.A new approach to invisible water marking of color images using alpha blending,Anirban Patra; Arijit Saha; Ajoy Kumar Chakraborty; Kallol Bhattacharya,

Development of computer networking generates many benefits in cyber world. Due to this great advancement, nowadays networking facilities are available at very low cost. But unfortunately this easy access becomes a threat to information security. Watermarking is a technique that is very often used in image processing to trace copyrighted products. It can also be used to trace products which are illegally distributed without permission. In our research work, a new technique for invisible watermarking of images using alpha blending has been proposed. Alpha blending is used to display an alpha bitmap and an alpha bitmap is that one which has transparent and semi-transparent pixels. We have worked on color image and gray scale image. Gray scale image is used as watermark image which is kept hidden in the main scale image by different values of alpha in alpha blending method. This technique is actually done on each plane of the color image. The resulting image contains the information of color image and gray scale images but the main image is unseen to others. PSNR values are also calculated to check the robustness of the reconstructed image. Applying some post-processing work,

this can be used in image steganography also.

V.MODULES

- Image Processing Module: This module will handle the manipulation and processing of digital images, including loading, resizing, and applying watermarking techniques.
- Watermark Embedding Module: This module will be responsible for embedding watermarks into the images using different techniques such as spatial domain watermarking, frequency domain watermarking, or hybrid methods.
- Watermark Extraction Module: This module will focus on extracting watermarks from watermarked images, allowing authorized users to verify ownership or detect unauthorized usage.
- Authentication Module: This module will implement algorithms to authenticate watermarks, ensuring the integrity and authenticity of the embedded information.
- User Interface Module: This module will provide a user-friendly interface for interacting with the system, allowing users to upload, watermark, and manage images easily.
- Encryption Module: This optional module can be included to encrypt the embedded watermarks, enhancing security and preventing tampering or removal by unauthorized parties.
- Database Module: This module will handle the storage and retrieval of watermarked images and associated metadata, providing efficient data management capabilities.
- Integration Module: This module will facilitate the integration of the watermarking system with existing digital asset management systems, content management platforms, or e-commerce websites.

VI.CONCLUSION

In conclusion, the "Watermarking Images" project offers a vital solution to the pervasive issue of digital image protection and copyright infringement. By implementing robust watermarking techniques and developing a comprehensive system, we aim to empower content creators with the tools

they need to safeguard their intellectual property rights in the digital domain. Through the development of modules for image processing, watermark embedding and extraction, authentication, user interface, encryption, database management, and integration, we have laid the foundation for a powerful and versatile watermarking system. This system not only enables content creators to embed subtle, visually imperceptible marks into their images but also provides mechanisms for verifying ownership and detecting unauthorized usage. By incorporating advanced algorithms and ensuring compatibility with existing digital asset management platforms, our system offers a seamless and efficient solution for protecting digital images across various online platforms and applications. Moving forward, we recognize the importance of continuous refinement and improvement to address emerging challenges and enhance the effectiveness of the watermarking system. Overall, the "Watermarking Images" project represents a significant step towards promoting digital rights management and fostering a culture of respect for intellectual property in the digital age.

VII.REFERENCES

1.A Patra, A Saha and A K Chakraborty, "Watermarking of Multiple Gray scale image using Alpha Blending", International Research Journal of Engineering and Technology (IRJET), vol. 04, no. 03, pp. 302-304, Mar 2017.

2. A Patra, A Saha and A K Chakraborty;, "Watermarking of Multiple Color Images using Alpha Blending", National Conference on Information Photonics and Communication, 2017.

3. K Sneha, N Roy, A Patra and A Saha, "Watermarking in Medical Images Using Alpha Blending", IJSART, vol. 3, no. 10, pp. 384-387, October 2017.

4. P Sharma and S Swami, "Digital Image Watermarking Using 3 level Discrete Wavelet Transform", Conference on Advances in Communication and Control Systems, 2013.

5. G Kaur and K Kaur;, "Image Watermarking Using LSB (Least Significant Bit)", International Journal of Advanced Research in Computer Science and Software Engineering, vol. 3, no. 4, April 2013.

6. Weiqi Luo, J Huang and F Huang;, "Edge Adaptive Image Steganography Based on LSB Matching Revisited", IEEE Transactions on Information Forensics and Security, vol. 5, no. 2, pp. 201-214, June 2010.

7. Chang-Qing Zhua, B. Cheng-Song Yang and Qi-Sheng Wang, "A Watermarking Algorithm For Vector Geo-Spatial Data Based On Integer Wavelet Transform" in The International Archives of the Photogrammetry Remote Sensing and Spatial Information Sciences, Beijing, vol. XXXVII, 2008.

8. Huang-Chi Chen, Yu-Wen Chang and Rey-Chue Hwang, "A Watermarking Technique based on the Frequency Domain", Proceedings of Journal of Multimedia, vol. 7, no. 1, 2012.

9. L Rajab, T AI-Khatib and Ali AI-Haj, "A Blind DWT-SCHUR Based Digital Video Watermarking Technique" in Journal of Software Engineering and Applications, 2015.

10. Haowen Yan, Jonathan Li and Hong Wen, "A key pointsbases blind watermarking approach for vector geospatial data", Proceedings of Elsevier Journal of Computers Environment and Urban Systems, vol. 35, no. 6, 2012.

11. R V Totla and K. S. Bapat, "Comparative Analysis of Watermarking in Digital Images Using DCT & DWT", International Journal of Scientific and Research Publications, vol. 3, no. 2, February 2013.

12. Frank Y. Shih and Xin Zhong, "High-capacity multiple regions of interest watermarking for medical images", *Information Sciences*, vol. 367–368, pp. 648-659, 2016.

13.M. P. Turuk and A. P. Dhande, "A Novel Reversible Multiple Medical Image Watermarking for Health Information System", *Journal of Medical Systems*, vol. 40, pp. 269-282, December 2016.

14. Xiaolong Li, Bin Yang and Tieyong Zeng, "Efficient Reversible Watermarking Based on Adaptive Prediction-Error Expansion and Pixel Selection", *IEEE transactions on image processing*, vol. 20, no. 12, December 2011.

15.Jose Juan Garcia-Hernandez, Wilfrido Gomez-Flores and Javier Rubio-Loyola, "Analysis of the impact of digital water marking on computer-aided diagnosis in medical imaging", *Computers in Biology and*

Medicine volume, vol. 68, pp. 37-48, 2016.

16.Arda Ustubioglu and Guzin Ulutas, "A New Medical Image Watermarking Technique with Finer Tamper Localization", *Journal of Digital Imaging*, pp. 1-16, February 2017.

17.Amit Mehto and Neelesh Mehra, "Adaptive Lossless Medical Image Watermarking Algorithm Based on DCT DWT", *Computer Science*, vol. 78, pp. 88-94, 2016.

18.Ruchira Naskar and Rajat Subhra Chakraborty, "A Technique to Evaluate Upper Bounds on Performance of Pixel–prediction Based Reversible Watermarking Algorithms", *Journal of Signal Processing Systems*, vol. 82, no. 3, pp. 373-389, March 2016.

19.Muhammad Arsalan, Aqsa Saeed Qureshi, Asifullah Khan and Muttukrishnan Rajarajan, "Protection of Medical Images and Patient Related Information in Healthcare Using an Intelligent and Reversible Watermarking Technique", *Applied Soft Computing*, vol. 51, pp. 168-179, February 2017.

20.Abhilasha Sharma, Amit Kumar Singh and Satya Prakash Ghrera, "Robust and Secure Multiple Watermarking for Medical Images", *Wireless Personal Communications*, vol. 92, no. 4, pp. 1611-1624, February 2017.

21.Thai-Son Nguyen, Chin-Chen Chang and Xiao-Qian Yang, "A reversible image authentication scheme based on fragile watermarking in discrete wavelet transform domain", *AEU - International Journal of Electronics and Communications*, vol. 70, no. 8, pp. 1055-1061, August 2016.

22.Ales Roceka, Karel Slavícekb, Otto Dostálb and Michal Javorník, "A new approach to fully-reversible watermarking in medical imaging with breakthrough visibility parameters", *Biomedical Signal Processing and Control*, vol. 29, pp. 44-52, 2016.

23.Rayachoti Eswaraiah and Edara Sreenivasa Reddy, "Robust medical image watermarking technique for accurate detection of tampers inside region of interest and recovering original region of interest", *IET Image Processing*, vol. 9, no. 8, pp. 615-625, 2015.

24.Seyedali Mirjali, "Dragonfly algorithm: a new meta-heuristic optimization technique for solving single-objective discrete and multi-objective problems", *Neural Computing and Applications*, vol. 27, no. 4, pp. 1053-1073, May 2016