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Abstract

Steganography is the art of hiding the existence of data in another transmission medium, archive secrete communication.[1] The goal of stegannography is to hide an information message inside harmless cover medium in such way that it is not possible even to detect that secrete message. It does not replace cryptography but rather boosts the security using its obscurity features. Steganography method used in this paper is based on biometrics. And the biometric feature used to implement steganography is skin tone region of images [2]. Here

secret data is embedded within skin region of image that will provide an excellent secure location for data hiding. For this skin tone detection is performed using HSV (Hue, Saturation and Value) color space. Additionally secret data embedding is performed using frequency domain approach – DWT (Discrete Wavelet Transform), DWT outperforms than DCT (Discrete Cosine Transform). Secret data is hidden in one of the high frequency sub-band of DWT by tracing skin pixels in that sub-band. Different steps of data hiding are applied by cropping an image interactively. With the help of cropping an enhanced security than hiding data without cropping i.e. in whole image, so cropped region works as a key at decoding side. So with this object oriented steganogaphy we track skin tone objects in image with the higher security and satisfactory PSNR (Peak-Signal-to-Noise Ratio) .Modern steganography's goal is to keep its mere presence undetectable.

References

- AnjaliA.Shejul. Prof.U.L.Kulkarni"ADWT based approach for steganography using biometrics," in: Proceedings of the 2010 International conference on data storage and data Engineering.
- A. Cheddad, J. Condell, K. Curran and P. Mc Kevitt, "Biometric Inspired digital image Steganography", in: Proceedings of the 15 th Annual IEEE International Conference and Workshops on the Engineering of Computer- Based Systems (ECBS'08), Belfast, 2008, pp. 159-168.
- Johnson, N. F. and Jajodia, S.: "Exploring Steganography: Seeing the Unseen." IEEE Computer,31 (2): 26-34, Feb 1998.
- Ali Al-Atab ,Fawzi Al-Naima-Iraq "A modified high Capacity Image steganography based on wavelate Transform"in International Arab Journal of information technology ,Vol-7 No.4 Oct2010
- Lin, E. T. and Delp, E. J.:"A Review of Data Hiding in Digital Images". Retrieved on 1.Dec.2006 from Computer Forensics, Cyber crime and Steganography Resources, Digital Watermarking Links and Whitepapers, Apr 1999
- Petitcolas, F.A.P.: "Introduction to Information Hiding". In: Katzenbeisser, S and Petitcolas, F.A.P (ed.) (2000) Information hiding Techniques for Steganography and Digital Watermarking. Norwood: Artech House, INC.
- Fridrich, J., Golsjan, M. and Du, R.., (2001). "Reliable Detection of LSB steganography in Grayscale and Color Images." Proceedings of ACM, Special Session on Multimedia Security and Watermarking, Ottawa, Canada, October 5, 2001, pp. 27- 30.
- Po-Yueh Chen and Hung-Ju Lin "A DWT Based Approach for Image Steganography", International Journal of Applied Science and Engineering, 2006. 4, 3: 275-290
- Chang, C. C., Chen, T.S and Chung, L. Z., "A steganographic method based upon JPEG and quantization table modification," Information Sciences, vol.[4], pp. 123-138(2002).
- Provos,N. and Honeyman, P: "Hide and Seek: An introduction to steganography". IEEE security and privacy, 01 (3): 32-44,May- June 2003
- Abbas Chedda, Joan Condell, Kevin Curran and Paul Mc Kevitt "A Skin Tone Detection Algorithm for an Adaptive Approach to Steganography" , School of Computing and Intelligent Systems, Faculty of Computing and Engineering, University of Ulster, BT48 7JL, Londonderry,

Northern Ireland, UK,2008

- Ahmed E., Crystal M. and Dunxu H.: “Skin Detection-a short Tutorial”, Encyclopedia of Biometrics by Springer-Verlag Berlin Heidelberg 2009
- Chen,P. Y.and Liao,E.C., :A new Algorithem for Haar Wavelet Transform,” 2002 IEEE International Symposium on Intelligent Signal Processing and Communication System, pp.453-457(2002)

Index Terms

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Keywords

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