13/9 Lifting Wavelet Transform based Reversible Data Hiding

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Abstract

In this paper a novel 13/9 lifting scheme for hiding data has been implemented. Lifting schemes are the part of wavelet transformation which decomposes image into wavelet coefficients using basis function for analyzing multi-resolution images. Lifting scheme is preferred for data hiding because the operations are performed in spatial domain by simple LSB replacement. The 13/9 lifting scheme contains 13 low pass and 9 high pass coefficients. As more information in image lies at low frequency components, 13/9 implemented lifting scheme contains 13 low-frequency components, whereas 5/3 lifting scheme contains 5 low frequencies and 9/7 lifting scheme contains 9 low frequencies. Simulation results show that the payload and average PSNR are increased than the existing methods with the PSNR 58.17 dB at bit rate of 0.05 for Lena image.

References


Index Terms

Computer Science
Security

Keywords

Reversible Data Hiding, Encryption, Lifting Wavelets, Steganography.