Difference Expansion Based Reversible Data Hiding Scheme Using Edge Directions

Authors : Toshanlal Meenpal, Ankita Meenpal

Abstract : A very important technique in reversible data hiding field is Difference expansion. Secret message as well as the cover image may be completely recovered without any distortion after data extraction process due to reversibility feature. In general, in any difference expansion scheme embedding is performed by integer transform in the difference image acquired by grouping two neighboring pixel values. This paper proposes an improved reversible difference expansion embedding scheme. We mainly consider edge direction for embedding by modifying the difference of two neighboring pixels values. In general, the larger difference tends to bring a degraded stego image quality than the smaller difference. Image quality in the range of 0.5 to 3.7 dB in average is achieved by the proposed scheme, which is shown through the experimental results. However payload wise it achieves almost similar capacity in comparisons with previous method.

Keywords : information hiding, wedge direction, difference expansion, integer transform

Conference Title : ICDMCI 2015 : International Conference on Data Mining and Computational Intelligence

Conference Location : London, United Kingdom

Conference Dates : February 16-17, 2015