Lossless Secret Image Sharing Based on Integer Discrete Cosine Transform

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Abstract : This paper proposes a new secret image sharing method based on integer discrete cosine transform (IntDCT). It first transforms the original image into the frequency domain (DCT coefficients) using IntDCT, which are operated on each block with size 8*8. Then, it generates shares among each DCT coefficients in the same place of each block, that is, all the DC components are used to generate DC shares, the ith AC component in each block are utilized to generate ith AC shares, and so on. The DC and AC shares components with the same number are combined together to generate DCT shadows. Experimental results and analyses show that the proposed method can recover the original image lossless than those methods based on traditional DCT and is more sensitive to tiny change in both the coefficients and the content of the image.

Keywords : secret image sharing, integer DCT, lossless recovery, sensitivity
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