

High Capacity Reversible Watermarking through Interpolated Error Shifting

Authors : Hae-Yeoun Lee

Abstract : Reversible watermarking that not only protects the copyright but also preserve the original quality of the digital content have been intensively studied. In particular, the demand for reversible watermarking has increased. In this paper, we propose a reversible watermarking scheme based on interpolation-error shifting and error precompensation. The intensity of a pixel is interpolated from the intensities of neighbouring pixels, and the difference histogram between the interpolated and the original intensities is obtained and modified to embed the watermark message. By restoring the difference histogram, the embedded watermark is extracted and the original image is recovered by compensating for the interpolation error. The overflow and underflow are prevented by error precompensation. To show the performance of the method, the proposed algorithm is compared with other methods using various test images.

Keywords : reversible watermarking, high capacity, high quality, interpolated error shifting, error precompensation

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