

A Robust Hybrid Blind Digital Image Watermarking System Using Discrete Wavelet Transform and Contourlet Transform

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Abstract : In this paper, a hybrid blind digital watermarking system using Discrete Wavelet Transform (DWT) and Contourlet Transform (CT) has been implemented and tested. The implemented combined digital watermarking system has been tested against five common types of image attacks. The performance evaluation shows improved results in terms of imperceptibility, robustness, and high tolerance against these attacks; accordingly, the system is very effective and applicable.

Keywords : discrete wavelet transform (DWT), contourlet transform (CT), digital image watermarking, copyright protection, geometric attack

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