



RESEARCH ARTICLE

Analysis of Robustness of Hybrid Digital Image Watermarking Technique under Various Attacks

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Abstract— Protection of digital multimedia content has become an increasingly important issue for content owners and service providers. As watermarking is identified as a major technology to achieve copyright protection, the relevant literature includes several distinct approaches for embedding data into a multimedia element (primarily images, audio, and video). Digital watermarking is the process of embedding information into digital multimedia content such that the information can later be extracted or detected for a variety of purposes including copy prevention and authentication proof. In this paper, we propose a method of non-blind transform domain watermarking based on DWT-DCT-SVD. The parameters used to test the robustness of the proposed algorithm are the Peak Signal to Noise Ratio (PSNR) and Weighted Peak Signal to Noise Ratio (WPSNR) and correlation coefficient (ρ). The experimental results show that the proposed method is more robust against different kinds of attacks and the watermarked image has good transparency.

Key Terms: - Digital watermarking; Discrete Cosine Transform; Discrete Wavelet Transform; singular value decomposition; Peak Signal to Noise Ratio; Mean squared Error; correlation coefficient.

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