Abstract

The paper proposes a novel robust watermarking technique based on newly introduced Nonsubsampled contourlet transform (NSCT) and singular value decomposition (SVD) for multimedia copyright protection. The NSCT can give the asymptotic optimal representation of the edges and contours in image by virtue of the characteristics of good multi resolution shift...
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invariance and multi directionality. After decomposing the host image into sub bands, we choose the low frequency directional sub band and apply singular value decomposition. The singular values of the original image are then modified by the singular values of nonsubsampled contourlet transformed visual grayscale logo watermark image. This hybrid approach improves the performance of the watermarking technique compared to earlier techniques. Experimental results shows that the hybrid technique is resilient to various linear and non linear filtering, JPEG compression, JPEG2000 compression, Histogram equalization, Grayscale inversion, Contrast adjustment, gamma correction, alpha mean, cropping, Gaussian noise, scaling etc.

Reference

- Alexander Sverdlov, Scott Dexter and Ahmet M.Eskicioglu “Robust DCT_SVD domain image Watermarking for copyright protection: embedding data in all frequencies”.
- Xiang Yang Wang, Yi-Ping Yang and Hong-Ying Yang, “A novel nonsubsampled
- Matlab 7.6 version ,Image Processing Tool Box.

Index Terms

Computer Science Security

Key words

Image watermarking nonsubsampled
contourlet transform
SVD
visual watermark logo
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