Abstract

Watermarking refers to the hiding of a message in a host message in such a way that if this signal is altered; the hidden message still survives if the host survives. Watermarking used for covert communication, Authentication, broadcast monitoring, tamper proofing, etc. This paper proposes an improved image watermarking scheme based on log polar mapping (LPM) and angle quantization index modulation (AQIM). To keep the watermark robust to translation, rotation and scaling attacks, Log Polar mapping followed by Fast Fourier transform is performed on the original unwatermarked image before embedding the watermark. Using AQIM, the watermark is embedded in the gradient vectors of large magnitudes by quantizing the angle. Gradient vectors are obtained in the form of Discrete Wavelet Transform (DWT) coefficients. To make the watermark robust to amplitude scaling attacks, this method embeds watermark in the vector angle. Imperceptibility is increased by embedding watermark in the gradient vectors with large magnitudes. Increase in the watermarking capacity, is achieved by employing multiple levels DWT.
References


12. Joseph J.K., O. Ruanaidh and Thierry Pun “Rotation, Scale and Translation Invariant Digital Image Watermarking” Centre Universitaire d'Informatique, Universite de Geneve, 24 rue General Dufour, CH-1211 Geneve 4, Switzerland


Index Terms

Computer Science

Image Processing
Keywords

LPM, AQIM, DWT, DCT