Abstract

Fast and massive dissemination of image data across the Internet imposes great challenges of protecting images against illegal access and unauthorized reproduction. Image watermarking provides a powerful solution for intellectual protection. This paper presents a new feature-based image watermarking scheme which is robust to desynchronization attacks. The Harris–Laplace detector is used to extract the robust feature points, which can survive various signal processing
and affine transformation. A local characteristic region (LCR), is constructed based on the scale-space representation of an image is considered for watermarking. At each LCR, the digital watermark is embedded, by modulating the magnitudes of Discrete Cosine Transform coefficients. The performance of watermark detection is computed based on the correlation coefficient. The correlation coefficient is computed between the embedded watermark bits and the detected bits. The results show that the proposed scheme is invisible and robust against various attacks which include common signals processing and desynchronization attacks.

Reference

- H.-Y. Lee et al., “Evaluation of feature extraction techniques for robust watermarking,” in
Digital Image Watermarking Against Desynchronization Attacks


Index Terms

Computer Science

Security

Key words

Image watermarking

desynchronization

feature

attacks

points

local characteristic region (LCR)