Abstract

Illegitimate duplication, piracy, circulation and amendment of digitized information are well thought-out infringements aligned with intellectual property rights. Thus digital watermarking came into existence due to the evolving obligation of copyright protection.

We have presented a blind digital video watermarking technique based on the Discrete Wavelet transform (DWT), Firefly algorithm and the real Schur Decomposition. The scheme is using optimized firefly algorithm to trace the best DWT blocks with large texture value for inserting watermark and to minimize the error rate. The scheme starts with applying two-level DWT to the video scene. It finds the suitable place to embed watermark using Firefly algorithm and then apply Schur decomposition. Schur uses Singular Value Decomposition to embed the binary watermark bits in the resultant block upper triangular matrix. The proposed technique shows high efficiency since Schur decomposition requires fewer computations compared to other transforms and robustness due to optimized firefly algorithm. It provides better results in terms of imperceptibility and normalized correlation.
References


Index Terms

Computer Science

Algorithms
Keywords

Discrete Wavelet Transform (DWT), Firefly Algorithm, SCHUR Decomposition, Normalized correlation