Aiming at the secure, robust and perceptually invisible data hiding goal, a Discrete Cosine Transform (DCT) based blind video watermarking algorithm which is robust against collusion attack is proposed in this paper. This research work embeds the binary code acting as a digital fingerprint in the video frame that uniquely recognizes the authenticated user. The fingerprints are designed in the DCT domain that resist collusion and controls piracy. The confidentiality of the original frame is achieved by embedding watermark logo at the random blocks in the successive frames of the video. This is done by using Pseudo Random Number (PRN) generator whose seed value generated by a permutation vector acts as a secret key (K). During the extraction of watermark information, the same permutation vector is used to regenerate the secret key as well as the selection of the embedding blocks. This achieves the piracy control in digital fingerprinting mechanism as none of unauthorized users can tamper the original content. The experimental results show that the proposed scheme is robust against the collusion attack.

Index Terms

Computer Science  Security

Keywords

DCT, Collusion attack, Pseudo random number, Watermark embedding, Robustness.