ABSTRACT

Video piracy is the act of obtaining, copying and selling or distributing videos that

already had the copyright without the consent of the copyright owner. Over the past decade,

online video piracy has become a significant concern for film producers. Digital video

watermarking is a way to restrict the illegal digital distribution. Watermarking is a proses which

embed an additional information in the host video signal so that the embedded watermark can

not be seen and difficult to be erased or altered. Invisibility of watermark refers to the ability

to maintain the perception of the original video quality after the video is embedded.

Video watermarking in this final project using a .mp4 format video as the host media.

The images that will be embedded are two different bitmap images. Host video frames are

divided into two equal lots, where the frame 1 to nframe/2 are embedded by watermark image

1 and (nframe/2) +1 until the last frame are embedded by watermark image 2. The methods

which is used are DTCWT and SVD. The two watermarks are embedded and extracted in each

subband at a depth level 1 to level 4 DTCWT - SVD with the aim for seeking the best subband

and the best level for embeding and extracting. In the extraction testing, watermarked video is

given several attacks before extraction process.

The greater the level of embeding, the size of embedded image will be smaller so the

size of the watermarked video is also getting smaller. The best DTCWT level to embed the

watermark image is level 4 with an average MOS score is 3,81 and the average value of PSNR

is 41.2701 dB. The better subband for embedding are subband with three parts such as

 $\{1,5\}\{1,1\}\{1,2\}$ and $\{1,5\}\{1,2\}\{1,2\}$. Subband with three parts on each level can hide the

watermark images without causing damage in host video. Based on the MOS value, the best

extraction images are generated by the embeding at level 1 and level 2 with the average MOS

value for the first extraction image is 4,61 and value for the second extraction image is 4,87.

Although ist MSE value is not the best, the extraction MOS value shows that the extracted

images are have a perfect similarity with the watermark images.

Keywords

: DTCWT, SVD, Video Watermarking

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