

ABSTRACT

Copyright patenting is necessary at this time due to start shifting shapes of many works into digital and it also raises the number of harmful things such as piracy, mass duplication, illegal dissemination, and others that would be detrimental to the creators.

This research will examine an image that has been through the process of image watermarking using Compressive Sensing with Orthogonal Matching Pursuit algorithm, wherein the embedding and extraction process was conducted through approach Singular Value Decomposition based on Discrete Cosine Transform. The combination of Compressive Sensing Orthogonal Matching Pursuit algorithm with Singular Value Decomposition based on Discrete Cosine Transform is expected to improve the quality of the image watermarking regard to robustness, embedding capacity, and transparency.

The final result of this final project is watermarking application on Matlab which has stable BER (robustness) value close to 0 without attack and PSNR value above 40 dB (49.647-infinite). With Compressive Sensing optimization using Orthogonal Matching Pursuit algorithm on watermark image, PSNR value becomes better than without optimization (50.9814-infinite) but resistance to attack and BER value tend to fluctuate.

Keywords: Image Watermarking, Compressive Sensing, Orthogonal Matching Pursuit, Discrete Cosine Transform, Singular Value Decomposition.