ABSTRACT

Digital image is one of media form that can be easily found for free on the internet. Despite the positive impacts in this digitalization era, it also brings the negative impacts on content creators, and that is copyright infringement through piracy. Therefore, it is necessary to use some methods to protect the copyright of those contents, it is called watermarking. Watermarking is a way to prevent piracy by inserting invisible and robust information that do not damage the quality of the host image.

In this study, the writer use compressive sensing method in an image watermarking system with Discrete Wavelet Transform-Singular Value Decomposition (DWT-SVD) insertion algorithm and Basis Pursuit Denoising (BPDN) reconstruction algorithm. DWT is a discrete time signal decomposition technique where depiction of a digital signal scale is obtained with filterization technique. The basic idea of SVD is to find single value of a cover host or each block from cover host, and then changing the single value to insert the watermark. BPDN is a global optimization based decomposition method in linear programming.

The test was conducted using 80% measurement rate, LH sub-band, and db2 mother wavelet. This test produced an average output value of 141,812dB PSNR, 0,045 MSE, 0,026 BER, and 0,878 SSIM. This system holds itself really well against noise salt and pepper attack.

Keywords: Image Watermarking, Compressive Sensing (CS), DWT-SVD, BPDN