ABSTRACT

This research is based on the author's observation that the copyrighted video detection system applied on the internet is sound-based watermark detection. After observation, it was found that there were copyrighted videos still widely circulating on the internet with slightly altered voices making it difficult for the system to detect them. Therefore, there needs to be another method used to solve the problem of copyright infringement, one of the solutions is the Watermarking method based on modified Singular Value Decomposition.

Watermarking is a method for authenticating data by adding a sign or how to insert certain data or information into digital data, but the results of watermarking are not felt by the human senses. By adding Intellectual Property data (e.g. creator, license model, creation date, or other copyright information) in digital objects, copyright owner can demonstrate that they are the creators and share this information with every copy, even when the digital object has been uploaded to a third party site. It can also be used to determine whether a work has been tampered with or modified.

The proposed watermarking method is to use the modified Singular Value Decomposition (SVD) Algorithm Method in the Frequency Domain. Singular Value Decomposition is a technique that can be used mathematically to extract singular values in 2D images that represent intrinsic properties of image algebra. SVD-based watermark is obtained by modifying the S or U and V matrices. SVD technique is used in watermarking videos because it has good stability.

From the research, it was found that PSNR Embedding using modified SVD with a value of 51.11289 db. The PSNR Extraction was obtained with the value of 26.36281 db. The average BER yield of the modified SVD was 2.6795%. SSIM value 0.561623

Keywords: video watermarking, Singular Value Decomposition