

APPLICATION OF THE DISCRETE COSINE TRANSFORM METHOD FOR SECURING DIGITAL IMAGES

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ABSTRACT

Current technological developments have changed the way we share information through digital media, however, this has also increased the risks of copyright protection. Multimedia information is vulnerable to unauthorized change and distribution, threatening copyright owners. Therefore, watermarking techniques, especially in inserting grayscale images into digital images, are an important step in protecting digital copyright. The parameters used to calculate the difference are PSNR and MSE. The method often used in watermarking techniques is Discrete Cosine Transform (DCT). The advantage of DCT lies in its strong ability to maintain image integrity, especially when the image undergoes a compression process. The research results show that watermark images can be inserted and extracted. The insertion results have a PNSR value of 44.12780839413584 and an MSE of 2.477953562562361. This shows that the processed image which is inserted with a watermark image has almost no differences that can be seen with the naked eye.

Keywords: Digital Image, Discrete cosine transform, Data Security, Watermarking