

WATERMARKING APPLICATION USING LEAST SIGNIFICANT BIT (LSB) METHOD TO PROTECT OWNERSHIP OF DIGITAL IMAGE FILES (JPG)

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ABSTRACT

The digital era makes it easier to store and distribute content, but increases the risk of data misuse and copyright infringement. Digital watermarking, especially the Least Significant Bit (LSB) method, is a solution to protect intellectual property rights by inserting hidden information without changing the visual quality of the image. This study develops a web-based application to insert watermarks into images to protect copyright and ensure watermark extraction as a means to ensure that the watermark has been inserted. The results show that the LSB method is effective in inserting watermarks with high transparency and has the weakness of being vulnerable to light manipulation such as JPG compression, making it a practical solution to protect copyright and the integrity of digital content.

Keywords: Digital Watermarking, Least Significant Bit (LSB), Copyright Protection, Digital Image, Data Security