

## Abstract

Watermarking is a branch of steganography. Watermarking is a technique to insert data into a digital host (image, audio, video) however it does not look like the original. In content authentication, the host image is known and modified by extracting the watermark. If the watermark is not detected, we conclude that the host image has been modified. One example of watermarking for content authentication is reversible watermarking. Reversible watermarking is used in cases where the original host is very important and does not allow any degradation and distortion like multimedia archives, military image processing and medical image processing for patients. So content authentication is needed to verify the host image. By reversible watermarking implemented for content authentication we know if the image has been modified or not by extracting the watermark.

In this final project, it will be implemented and analysed digital image watermarking by reversible contrast mapping based on a digital image. Reversible contrast mapping is a simple integer transform that applies to pairs of pixels. This scheme is based on the spatial domain without any data compression in the inserted data. This scheme uses the least significant bits (LSB) for insertion.

**Keywords:** reversible contrast mapping, reversible watermarking, bitmap, least significant bits (LSB), spatial domain.