Abstract

Medical image is an object that can help a doctor to diagnose the patient. Of course, the desired outcome of the diagnosis of medical images is an accurate result. There are two important issues in medical image, the authenticity and ownership of the image. With these two things considered, the accuracy of medical images to help in diagnosing patients is expected to be higher. However, with the rapid growth of technology today, there are often parties trying to manipulate the medical image by utilizing existing technology sophistication. It can be dangerous for patients. therefore, it takes a concrete solution to protect the authenticity of an image from the image manipulation efforts. Watermarking digital image is one solution that can be used to protect medical images from manipulation efforts.

By inserting a watermark, the location of medical image manipulation can be detected by the system. In addition, the manipulated image can also be recovered near to its original state by inserting an average intensity of the image blocks.

In this final project, there are detection in image manipulating attacks and image recovery in ROI using watermark toward LSB modifications . In addition, there are reversible watermarking using Huffman's compression method to insert image's original LSB into image's RONI.

The experimental results show that this watermarking system can detect and localize any tampering with up to 100% accuracy. This watermarking scheme can also perform image recovery on manipulated images with up to 98% recovery rate.

Keywords: medical image, tamper detection, recovery, reversible, watermarking, LSB Modification, Huffman.