ABSTRACT

Steganography is a technique to hide secret messages within a cover media so that people will not know the content or the existence of the said message. The sent secret message can be in the form of text, image, voice, and video. The hidden secret message can also be in the form of text, image, voice, or video. This final paper designs a system using Discrete Wavelet Transform method and Cellular Automata encryption method. These two methods are combined and used to hide a secret message in text form to achieve a higher level of security. This final paper aims to provide two levels of security. The first level is to hide a message using steganography and uses a special password to access information within the text. The second level uses a 2D Cellular Automata system.

The result of this final paper achieves a stego image with a great quality (PSNR $\geq$ 39 dB), with a MOS (Mean Opinion Score) around 4.6 -5 acquired from 30 observers and a CA image in poor quality containing a secret message with a CER score that is excellent without noise in all red, green, blue layers (0%) with a maximum character count of 8192 characters. The system is tested with several noise which are Gaussian noise, Salt & Paper noise and Rescale.

Key words: Steganography, Cellular Automata, Discrete Wavelet Transform