Abstract

The easiness of spreading multimedia data through media such as internet has arise the need of a system that can secure the data. Digital watermarking is one of the way. Digital watermarking is a digital signal proccessing that is done to protect the copyright of a multimedia product by embeding watermark into the product.

In this final project, digital watermarking will be done to digital image in the DCT domain. The problem is how to determine the modified frequency coefficent so that the watermark data will still have a good imperceptebility and a good robustness. Therefore, genetic algorithm is used to determine the coeffiicient position to embed the watermark data to the host image.

The optimal parameter that obtained optimal solution in deciding DCT coefficient are population size 20, crossover probability 0.7 and mutation probability 0.25. From the experiment result, objective measurement of watermarked image has a pretty good quality with PSNR > 40 dB. And the embeded watermark image could resist to gaussian noise with SNR $\geq$ 30dB, JPEG compression with quality factor $\geq$ 60 % and rescalling/resize with ¾ and 2 scalling.

Keywords : digital image, DCT,digital watermarking, genetic algorithm