

Universiti Teknologi MARA

Using Genetic Algorithms as Image  
Watermarking Performance Optimizer

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## **ABSTRACT**

Image watermarking is a method to hide a message in an image for transmission of secret data or identification purposes. The data will be embedded into the image digitally and whenever needed will be retrieved out of that image. The process of embedding and retracting the data cause the original embedded data to be distorted as a side effect of the current method used. Due to the frequently use of rounding approach, embedded data or watermark hidden in an image is retrieved differently from the original watermark (Shih et al, 2004). The simple rounding will cause numerous errors in the embedded watermark especially when it is large. As a result, these errors will produce less accurate results during the process of extraction to the original watermark. Thus, this project will introduce a genetic-algorithms-based technique to overcome the rounding error problem. The fundamental is to adopt an appropriate fitness function for choosing the best chromosome which determines the conversion rule of real numbers into integers during the transformation. As a contribution, this method not only potential to restore the embedded data accurately, but also changes the least pixels in the host image.

Keyword: Genetic Algorithms, Image Watermarking

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