

(54) Title of the invention : VLSI IMPLEMENTATION OF IMAGE WATERMARKING USING TRANSLATION INVARIANT WAVELET TRANSFORM

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(57) Abstract :

Grayscale image watermarking is a technique used to embed information into digital images for various applications such as copyright protection, authentication, and tamper detection. VLSI (Very Large Scale Integration) based grayscale image watermarking systems are designed to perform this embedding process efficiently and securely. The VLSI-based grayscale image watermarking system consists of three main components: the watermark encoder, the watermark embedding module, and the watermark decoder. The watermark encoder is responsible for generating a watermark based on the input data, which can be text, an image, or any other type of digital information. The encoder then converts this watermark into a binary format suitable for embedding in the grayscale image. The watermark embedding module is the core of the system, which embeds the binary watermark into the host image. The watermark is inserted into the image by modifying the pixel. values of the image, such that the watermark is imperceptible to the human eye but can be extracted later using a decoding algorithm. The watermark decoder is responsible for extracting the watermark from the watermarked image. This involves analyzing the differences between the original image and the watermarked image, and then applying a decoding algorithm to extract the embedded information. The VLSI-based grayscale image watermarking system requires careful consideration of several factors, such as the size of the watermark, the robustness of the watermark, and the imperceptibility of the watermark. These factors must be optimized to ensure that the watermarking system is both effective and efficient. Overall, the VLSI-based grayscale image watermarking system provides a reliable and efficient way to embed information into digital images. It has numerous applications in various fields, including security, copyright protection, and authentication.

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