Abstract

This paper presents the design and implementation of six Image quality measures used to investigate the similarity between reconstructed images (after Denoising process) and the original ones on Spartan 3E XC3S500E FPGA. Since the visual comparison is too subjective, objective measure of image quality is required. The objective measure takes advantage of the variance in the statistical distribution of the coefficients in the image. The designed architecture was tested using five gray scale (128 x 128) images and it runs properly at a maximum clock rate of 70.74 MHz. By employing a parallel architecture, the speed performance has increased to 1064 times in comparison to Matlab running time.

References

FPGA based Implementation of Image Quality Measures: A Comprehensive Approach


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Index Terms

Computer Science  Image Processing

Keywords

Image quality, FPGA, Accumulators, parallel processing.