Analysis of Interpolation Techniques for Image Scaling based on IET and its Variants


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Abstract

Image scaling is an important technique that is widely used in many image processing applications. Here the interpolation technique is based on the interpolation error theorem and a bilateral error-amender is used to interpolate the resampled pixels. Interpolation technique based on IET is compared with conventional interpolation techniques such as Bilinear and Nearest Neighbour interpolation. The 3 methods are compared for visual quality and hardware utilization. Interpolation technique based on IET shows better performance than the existing methods. It solved the blurring and checkerboard effects to an extent. The visual quality is observed using MATLAB. The design is synthesized using Xilinx ISE software. Simulation
result is found using Modelsim software. The hardware implementation is done in Spartan 3E FPGA kit.

References

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Index Terms

Computer Science

Image Processing

Keywords

Image Scaling  interpolation  very Large Scale Integration(vlsi).