Abstract
Image processing (I. P.) systems, involving multiple processing functionalities, use standard software tools to manipulate pixel values. The load on the system is high when these software tools are used for real-time I. P. applications as the system they are running on are systems that are not specific to a particular application. This would require either high-end hardware systems or an application-specific hardware. Field Programmable Gate Arrays (FPGA) provide a cost-effective customizable solution. The Command Controlled Image Processor proposed in this paper provides a specific hardware-based solution which is designed only for certain specific image processing tasks. This paper deals with the design and implementation of a multifunctional processor with different modules using an FPGA. The design has been prototyped on a Xilinx Spartan 3E FPGA. The expected and achieved outputs have been given with comparison to standard MATLAB outputs. The hardware occupancies and delays have also been reported for different FPGA devices.

References

- Jonathan Joshi, Nisseem Nabar, "Reconfigurable Implementation of Wavelet based Image Denoising".
- Available BASYS2, Digilent Website: www.digilentinc.com/basys2

Index Terms

Computer Science

Image Processing
Keywords
Basys-2  Raspberry Pi  Fpga  Image Processing.