

Video Capture followed by Compression on FPGA

Read Me

This project is implemented on DE2i-150 Board

This Project is divided into two parts:

- Python algorithm Testing
- Hardware Implementation

Please find the following folders within the folder that contains this Read Me file.

- First Folder is **Video_compression_python_testing**
 - Please find the following files in this folder
 - Video_compression.py
 - Image_conversion_python
 - **Video_compression.py** file contain the testing of the compression algorithm on python. Opencv and numpy package should be installed to run the file
 - **Image_conversion_python**: This folder contain the python file to convert the image into txt file and vice-versa.
- Second folder is **Camera Interfacing**
 - This folder contain all the VHDL file for camera interfacing. Include this file in the quartus project. Top level entity to be defined as- **digital_cam_impl1.vhd**
 - Pin connection of the hardware is mention in report.
- Third folder is **Compression**
 - This folder contain the compression implementation on NIOS-Processor.
 - Open the **compression.qpf** as quartus project.
 - Pin connection for interfacing is mention in **compression.qsf**.
 - **Compression.qsys** contain the platform designer of NIOS processor.
 - In Design folder all the VHDL code for image reading, RLE and Zig-zag scanning is given
 - *NIOS C code that used for NIOS DCT implementation is present in the following folder compression/software/my_software/hello_world_small.c*
- Forth folder is **Project report**
 - *This folder contain the project final report*