

IMPLEMENTATION OF OBJECT TRACKING ON FPGA

Chuanhai Bai

Harshavardhan Kittur

PROJECT GOALS

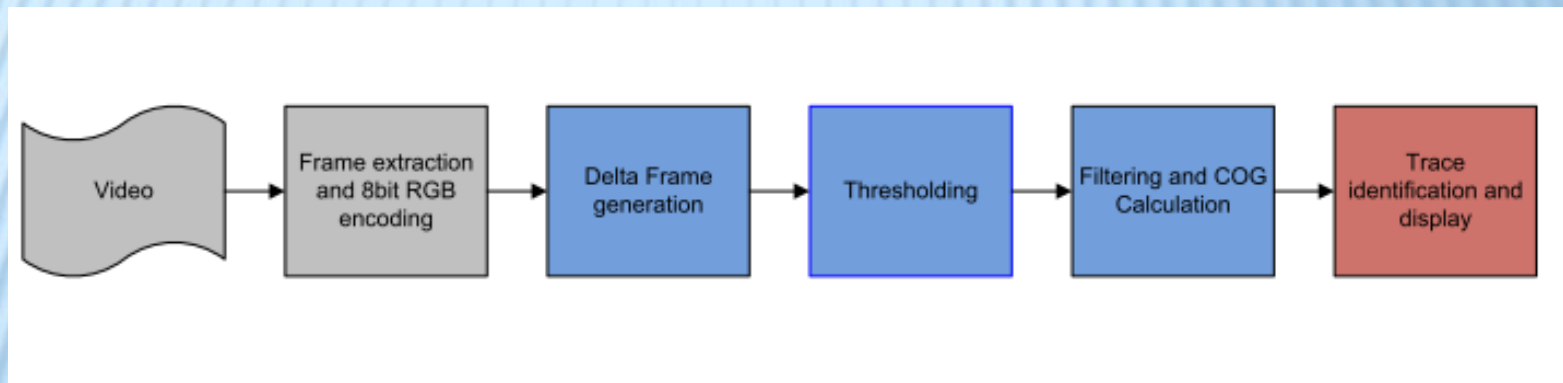


SD card interface

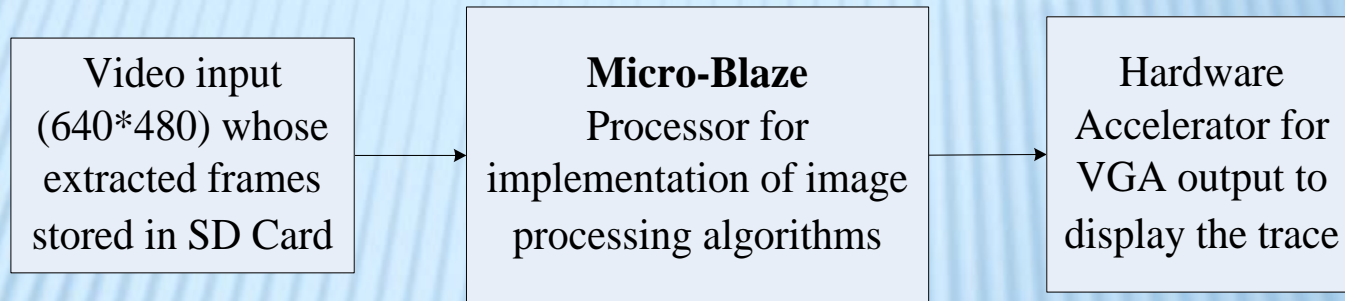
Implementation of
the image
processing algorithms

Hardware based VGA
interface

ALGORITHMIC BLOCK DIAGRAM



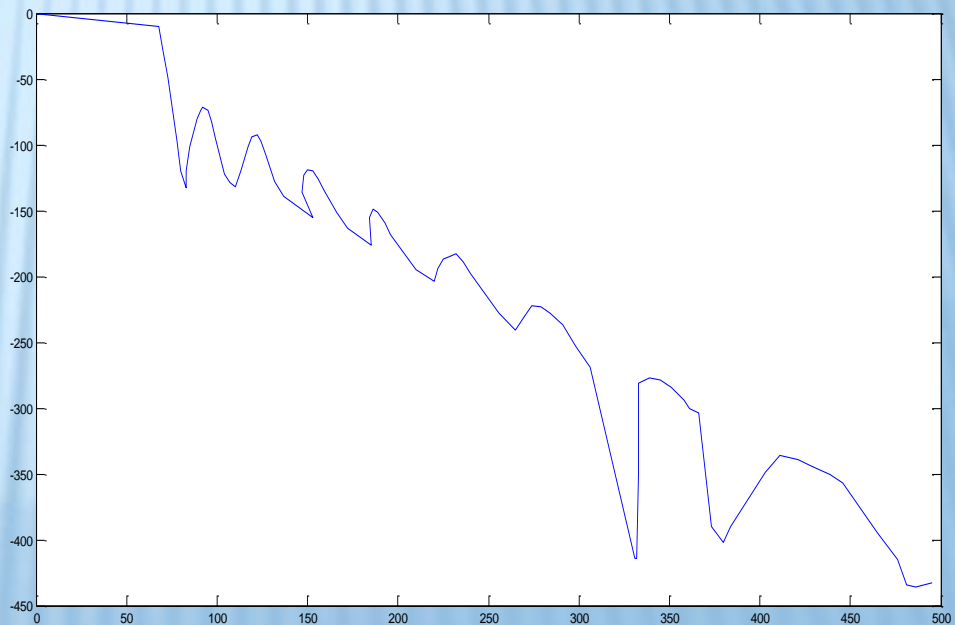
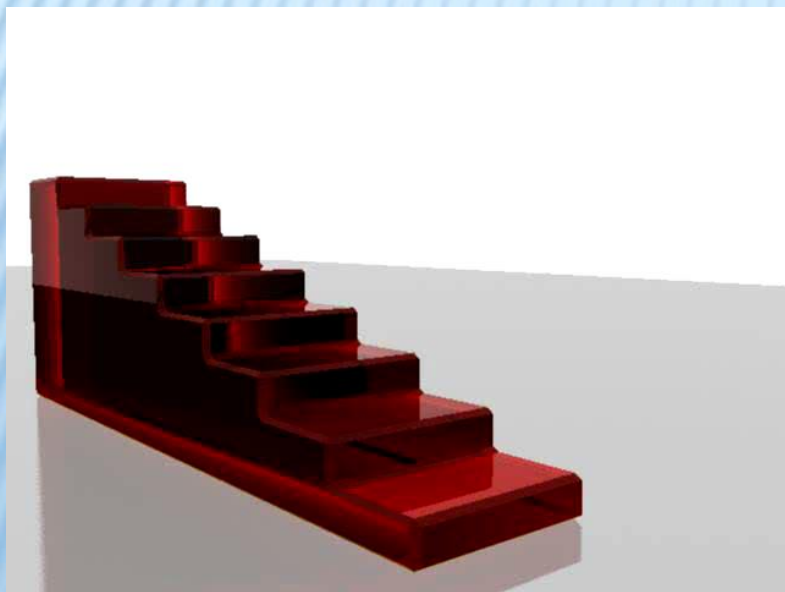
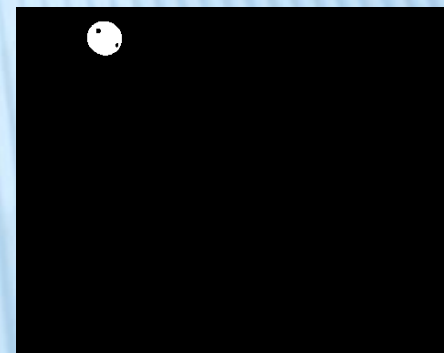
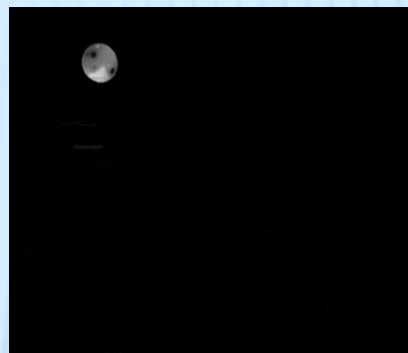
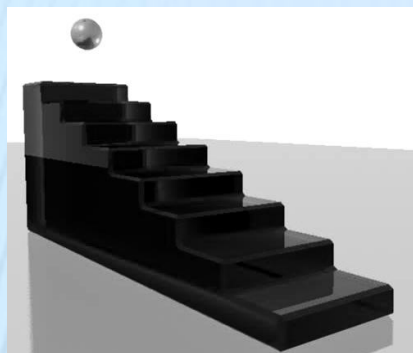
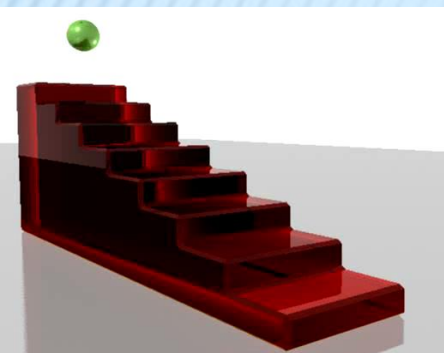
DESCRIPTION



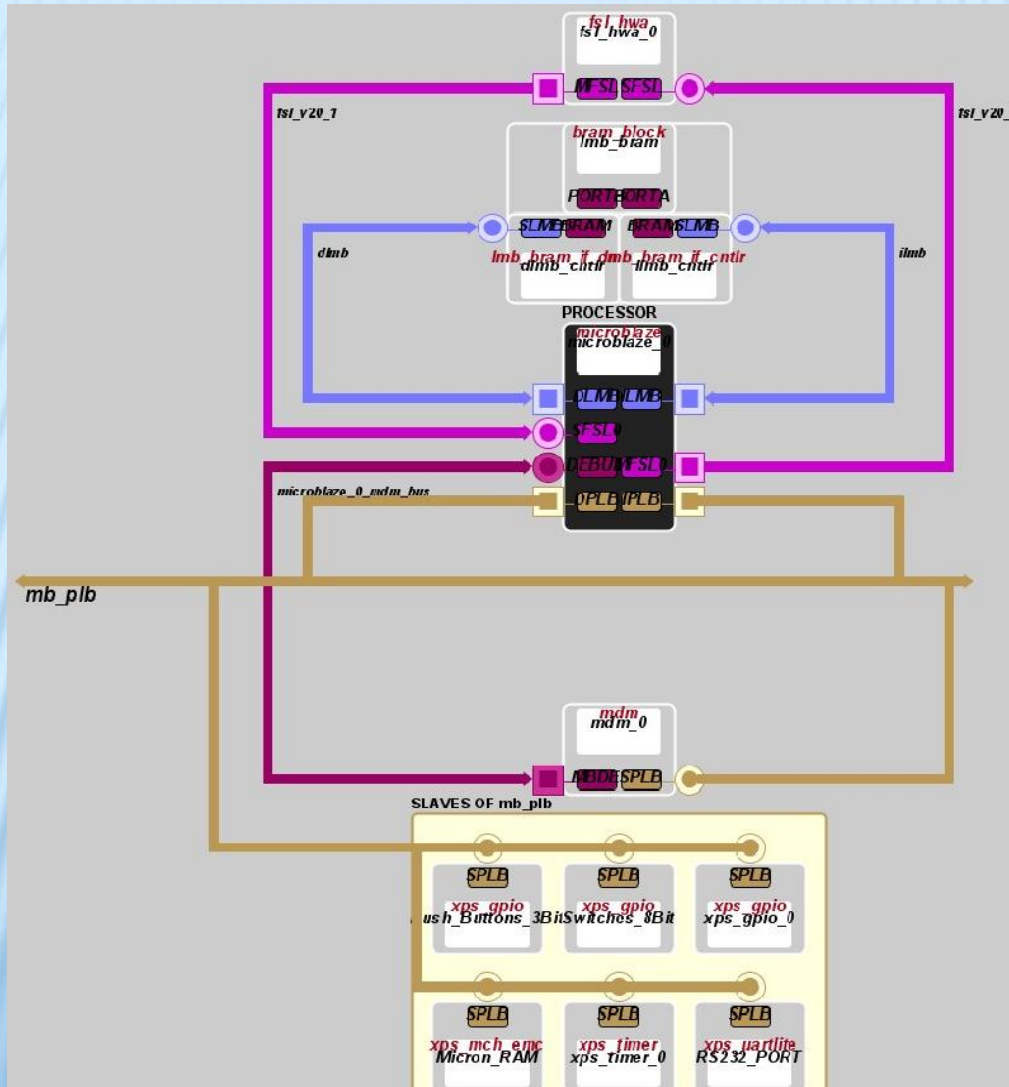
For more info . . .

List location or contact for specification (or other related documents)

MATLAB IMPLEMENTATION



BLOCK DIAGRAM



VIDEO FRAME EXTRACTION

- Video frame extraction and encoding is done in MATLAB.
- 8 bit RGB encoding is used with 3 bits for R, 3 bits for G and 2 bits for B.
- The pre-processed files are stored in SD card in FAT12 format.

SOFTWARE IMPLEMENTATION

- Software drivers handles the access to files written in SD card in FAT12 format .
- Also all the image processing algorithms are implemented in software including delta frame conversion, thresholding, and COG calculation.

HARDWARE IMPLEMENTATION

- VGA driver is computationally intensive and is implemented in hardware.
- VGA interface is used to display the object trace on the screen.