CSCE - 485
LAB3 - Fundamental Histogram Analysis, Segmentation and Tracking

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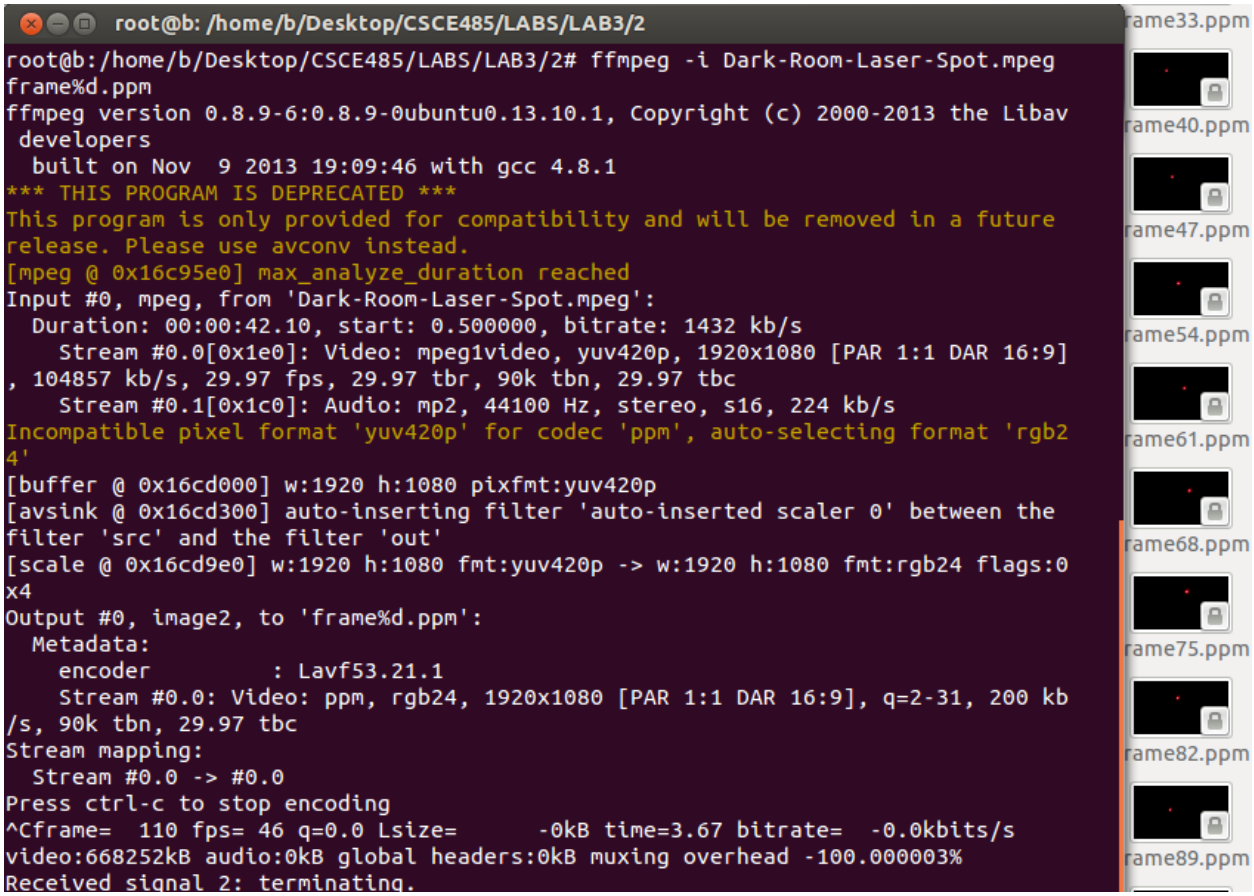
1.

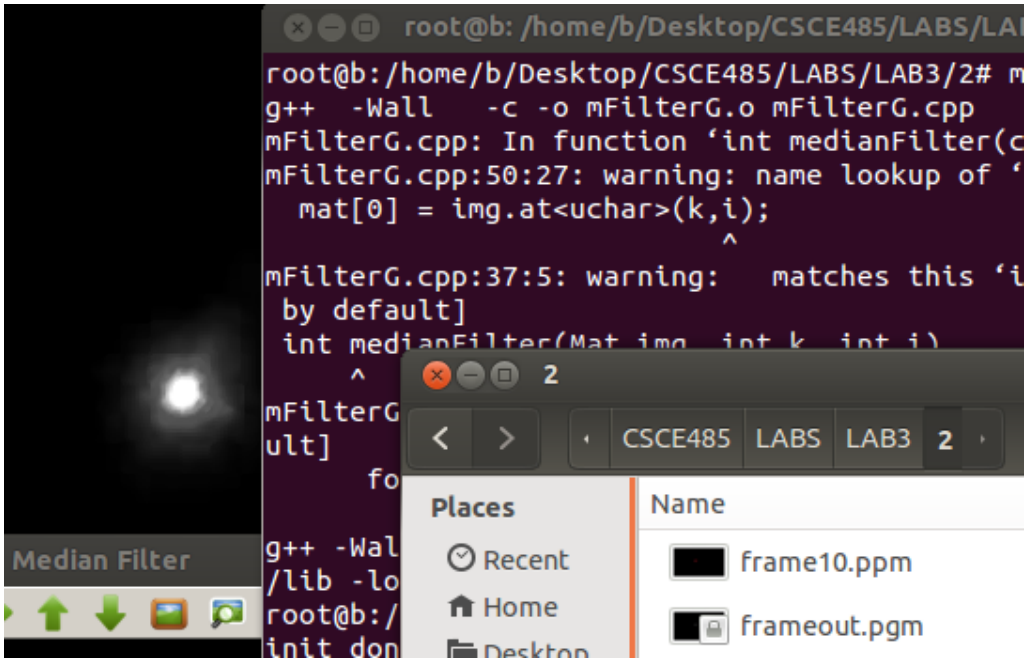
Included under folder .**1**\

2.

Capturing a single frame from mpeg video using **ffmpeg:**



Median filter applied on **frame10.ppm**:



Applying the median filter highlighted and helped to better distinguishing 0 from 255 on the G band.

3.

Frame differentiation can be achieved by subtracting the next frame to the initial so that all values different than 0 will return where movement (frame discrepancy) was detected. Working on a background with clutter light reflections and natural camera noise made it complicated to find out where in the histogram the values were actually different moving pixels or if it was just noise, one of my initial attempts was to actually go one further frame and differentiate the initial frame i from both i+1 and i+2, this unfortunately did not work as expected so instead I adjusted a filter to act as a threshold for values found on the histogram below 192, this was one of the optimal results, even not being perfect was the best I could do with the already overdue time given.

4.

The graymap conversion was pretty simple, loading a single channel from a given image, I reduced the frame size for a single channel to be used on the green band only.

5.

My cross-hair did not work properly, i had too many issues with the detecting proper values from histogram and calculating the Center of Mass, I plan to eventually fix the discrepancy from cross-hair and detected object, maybe with some office hours help.