Motion Detection Project Documentation

Capturing Video

To capture video, the VideoCapture object is used in two ways. First, by passing 0(or -1) as an argument and în the second case scenario by passing an actual mp4 video for the creation of the capture.

Capture is made frame-by-frame. But at the end, the capture has to be released.

Video.read() returns a bool (True/False). If the frame is read correctly, it will be True. So you can check the end of the video by checking this return value. Sometimes, video may not have initialized the capture. You can check whether it is initialized or not by the method video.isOpened(). If it is True, OK. Otherwise open it using video.open().

Motion Detection

Keeping all the time 2 frames and creating bounding boxes for changing pixels.

Absdiff is used for getting the absolute difference between the frames, and then converting that to gray scale.

A binary **threshold** is applied to the grayscale matrix, so that all pixels are either activated or deactivated. Default chosen values are between 30 and 255.

Contours are created based on the activated pixels using **cv2.findContours**.

Bounding rectangles are created based on the contours and only the ones with an area above 3000.

Also, a text is displayed on the up left corner of the video indicating if movement is detected or not.