

Yolo5 Real time detection

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1.usage method

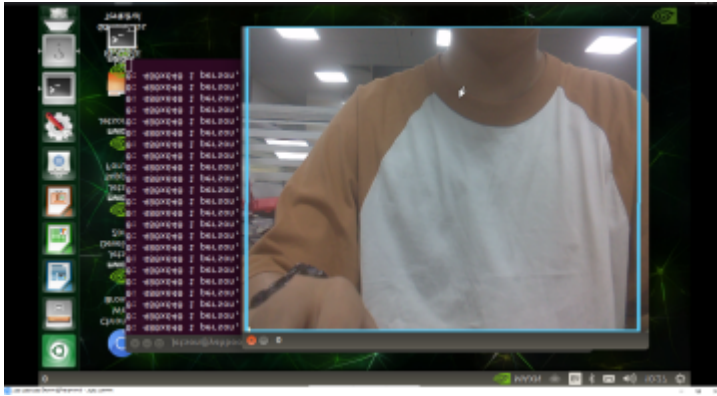
If you are directly using the YAHBOOM version of the mirror and using a USB camera you need to make a simple modification to uncomment line 292 in the datasets. py file of ~/yolov5/utils. Add '#' to line 293.

```
datasets.py 6 X
C: > Users > Administrator > Desktop > datasets.py > get_hash
283     for i, s in enumerate(sources):
284         # Start the thread to read frames from the video stream
285         print(f'{i + 1}/{n}: {s}... ', end='')
286         url = eval(s) if s.isnumeric() else s
287         #if 'youtube.com/' in url or 'youtu.be/' in url: # if source is YouTube video
288         #     check_requirements(('pafy', 'youtube_dl'))
289         #     import pafy
290         #     url = pafy.new(url).getbest(preftype="mp4").url
291         #cap = cv2.VideoCapture(url)
292         #cap = cv2.VideoCapture(0)#OPEN USB
293         cap = cv2.VideoCapture(gst_str,cv2.CAP_GSTREAMER) #open CSI
294         assert cap.isOpened(), f'Failed to open {s}'
295         w = int(cap.get(cv2.CAP_PROP_FRAME_WIDTH))
296         h = int(cap.get(cv2.CAP_PROP_FRAME_HEIGHT))
297         self.fps = cap.get(cv2.CAP_PROP_FPS) % 100
298
299         _, self.imgs[i] = cap.read() # guarantee first frame
300         thread = Thread(target=self.update, args=([i, cap]), daemon=True)
301         print(f' success ({w}x{h} at {self.fps:.2f} FPS).')
302         thread.start()
303     print('\n') # newline
304
305     # check for common shapes
306     s = np.stack([letterbox(x, self.img_size, stride=self.stride)[0].shape for x in self.imgs], 0)
307     self.rect = np.unique(s, axis=0).shape[0] == 1 # rect inference if all shapes equal
308     if not self.rect:
309         print('WARNING: Different stream shapes detected. For optimal performance supply similar1
310
311     def update(self, index, cap):
312         # Read next stream frame in a daemon thread
313         n = 0
314         while cap.isOpened():
315             n += 1
316             # _, self.imgs[index] = cap.read()
317             cap.grab()
```

Run the following command directly

```
cd ~/yolov5 && python3 detect.py --source 0
```

After waiting for a while, the CSI camera turned on
You can see that the screen will display the recognized object



Press Ctrl+c and turn off the camera screen to end the program
And store the identified results in the yolov5/runs/detect/exp path (a video)

2.note

1. If an error is reported midway due to network issues, it can be placed in the folder of yolov5 from the attachment of the environment setup, yolov5s.pt
2. The CSI camera can only be used normally on Orin NX 16G boards and corresponding systems when running this tutorial. Other boards cannot be opened due to the incompatibility between the version of the jatpack and its own power and performance with YoloV5
3. If it is a self built image that is not configured using the YAHBOOM version, you need to rewrite the datasets. py file yourself.