**YOLOv5**

**LetterBox**

LetterBox function is used to scale an input image to the desired size. Comparing to the traditional way, LetterBox can have less padding so that less redundancy will improve the prediction efficiency.

The function uses bilinear interpolation and constant padding as default.

Im: input image

New\_shape: desired shape

Color: for padding constant

Auto: if it is true, the output image will be a minimum rectangle which width and height are both multiple of the stride (32). And the proportion of width and height will remain the same.

ScaleFill: if it is true, the input image will be stretch to the desired shape directly, while the image will have distortion. Thus, there will be no padding.

Scaleup: if it is false, the function will not scaleup image (from a small size to a large size).

Class LoadStreams

Stripe()

f.read().strip().splitlines() f.readlines()

f’ ’: same usage as format

12.01

Build up a motion detection system via both Flask and Django.

I Intend to try to figure out the output of YOLOv5 and its format. Then I will try to transform the original YOLOv5 project to an interface that receives the video stream from webcams (maybe a USB cam or a Raspberry Pi cam) and yields frames with its object classifications and bounding boxes.

Such an interface can be combined with Django Web server. An additional thread should be created for the YOLO model to do the prediction and it yields its outcomes, while the main thread for the server will send these message to the web browser or the frontend via streaming http response.