

# ĐỀ THI CHUYÊN MÔN

**Phòng Ban** Dự án Trí Tuệ Nhân Tạo (AI Project)

**Thời gian làm bài: 3 ngày**

(đề bài dành cho đối tượng Fresher - Junior)

## DESCRIPTION

YoloV7 has shown impressive performance on object detection, recognition, etc on multiple objects (Figure 1.a). For there, In this task, we want to customize the backbone model with multitask learning which reduce number of models when deploy on edge device. The model using the architecture of YoloV7 but expand a multiple head (Figure 1.b)

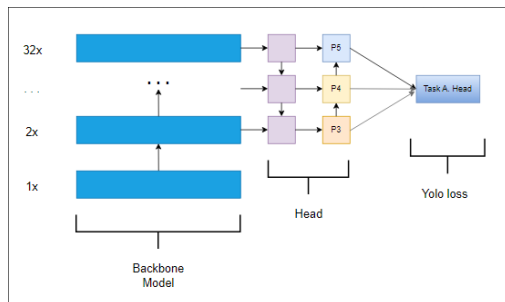


Figure 1.a: Original YoloV7 model

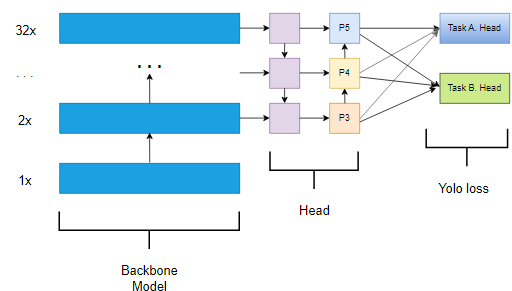


Figure 1.b: Customize YoloV7 model

## REQUIREMENTS

Customize a YoloV7 backbone using the original repo [WongKinYiu](#):

- The Task A. Head for 1st column of Fig 2 (person, bicycle, ... traffic light)
- The Task B. Head from 2nd column to the left one (fire hydrant, ... toothbrush)

Training on COCO dataset on classification [download here](#):

- The data is a sub-dataset from COCO with ~5k samples (1GB) for testing
- The training scripts MUST load his author YoloV7 pretrained weight on COCO ([here](#))

**Submit your code with github repo:**

- MUST have a [readme.md](#) scripts.
- MUST give the details how to run it.
- MUST clarify which part you have custom and explain why.

person	fire hydrant	elephant	skis	wine glass	broccoli	dining table	toaster
bicycle	stop sign	bear	snowboard	cup	carrot	toilet	sink
car	parking meter	zebra	sports ball	fork	hot dog	tv	refrigerator
motorcycle	bench	giraffe	kite	knife	pizza	laptop	book
airplane	bird	backpack	baseball bat	spoon	donut	mouse	clock
bus	cat	umbrella	baseball glove	bowl	cake	remote	vase
train	dog	handbag	skateboard	banana	chair	keyboard	scissors
truck	horse	tie	surfboard	apple	couch	cell phone	teddy bear
boat	sheep	suitcase	tennis racket	sandwich	potted plant	microwave	hair drier
traffic light	cow	frisbee	bottle	orange	bed	oven	toothbrush

(Figure 2: COCO classes)

*CHÚC BẠN THÀNH CÔNG!*