data-path：数据集路径

model：模型名称，resnet18，densenet等

device：训练设备，cpu或者cuda

batch-size：批大小，每次训练样本的个数

epochs：训练的总轮数

worker：加载数据的线程数

opt：优化器，sgd，adam等

lr：初始学习率，决定模型参数每次梯度更新的幅度

momentum：动量，优化器中的参数，调整梯度更新的方向

weight-decay：权重衰减，相当于为损失函数添加一个L2正则化，是模型学到的参数较小，有利于防止过拟合

norm-weight-decay：标准化层的权重衰减，默认和weight-decay一致

bias-weight-decay：偏置参数的权重衰减，默认和weight-decay一致

transformer-embedding-decay：torchvision transformer models里的embedding参数的权重衰减，默认和weight-decay一致

label-smoothing：标签平滑，改变原有标签的值域，弥补人工标注数据的微小偏差，减少模型对某一规律的绝对认知。可以防止过拟合

mixup-alpha：图片随机混合的alpha值

cutmix-alpha：图片随机剪切的alpha值

lr-scheduler：学习率调度器，steplr，

lr-warmup-epochs：学习率热启动的轮数

lr-warmup-method：学习率热启动的方法，constant

lr-warmup-decay：学习率衰减

lr-step-size：学习率经过多少轮训练后进行下降

lr-gamma：学习率下降因子，决定学习率每次下降的幅度

lr-min：最小学习率

print-freq：打印日志的频率

output-dir：输出目录

resume：checkpoint的路径

start-epoch：开始训练的轮数

cache-dataset：数据集缓存目录，可以更快的初始化，也会序列化transforms

sync-bn：使用同步批量标准化，分布式训练时使用

test-only：仅测试模型

auto-augment：自动数据增强

random-erase：随机擦除

amp：自动混合精度训练

world-size：分布式进程数

dist-url：创建分布式训练使用的url，默认是env://

model-ema：追踪模型参数的指数移动平均值，使模型参数的更新与一段时间内的历史数值有关

model-ema-step：更新mea模型的iteration数，控制着更新的频率

model-ema-decay：模型参数的指数移动平均值的衰减系数

use-deterministic-algorithms：使用确定性算法

interpolation：插值方法

val-resize-size：验证集的图片resize的尺寸

val-crop-size：验证集图片中心裁剪的尺寸

train-crop-size：训练集图片随机裁剪的尺寸

clip-grad-norm：最大梯度标准化

ra-sampler：在训练中，是否使用重复增强

ra-reps：使用重复增强的次数

weights：模型权重的路径

Coco数据集

1）对象检测：80个类别，包括：person, bicycle, car, motorcycle, airplane, bus, train, truck, boat, traffic light, fire hydrant, stop sign, parking meter, bench, bird, cat, dog, horse, sheep, cow, elephant, bear, zebra, giraffe, backpack, umbrella, handbag, tie, suitcase, frisbee, skis, snowboard, sports\_ball, kite, baseball bat, baseball glove, skateboard, surfboard, tennis racket, bottle, wine glass, cup, fork, knife, spoon, bowl, banana, apple, sandwich, orange, broccoli, carrot, hot\_dog, pizza, donut, cake, chair, couch, potted plant, bed, dining table, toilet, tv, laptop, mouse, remote, keyboard, cell phone, microwave, oven, toaster, sink, refrigerator, book, clock, vase, scissors, teddy bear, hair drier, toothbrush

1）目标检测：target需要字段：labels，boxes

2）实例分割：target需要字段：labels，boxes，masks

2）字幕：图像的自然语言描述

3）关键点检测：17个人体关键点，包括：nose, left\_eye, right\_eye, left\_ear, right\_ear, left\_shoulder, right\_shoulder, left\_elbow, right\_elbow, left\_wrist, right\_wrist, left\_hip, right\_hip, left\_knee, right\_knee, left\_ankle, right\_ankle

target需要的字段：labels，boxes，keypoints，

4）图像分割：91种类别，包括：banner, blanket, branch, bridge, building-other, bush, cabinet, cage, cardboard, carpet, ceiling-other, ceiling-tile, cloth, clothes, clouds, counter, cupboard, curtain, desk-stuff, dirt, door-stuff, fence, floor-marble, floor-other, floor-stone, floor-tile, floor-wood, flower, fog, food-other, fruit, furniture-other, grass, gravel, ground-other, hill, house, leaves, light, mat, metal, mirror-stuff, moss, mountain, mud, napkin, net, paper, pavement, pillow, plant-other, plastic, platform, playingfield, railing, railroad, river, road, rock, roof, rug, salad, sand, sea, shelf, sky-other, skyscraper, snow, solid-other, stairs, stone, straw, structural-other, table, tent, textile-other, towel, tree, vegetable, wall-brick, wall-concrete, wall-other, wall-panel, wall-stone, wall-tile, wall-wood, water-other, waterdrops, window-blind, window-other, wood

Target需要字段：masks（单通道的矩阵，矩阵里的值表示像素的类别）

损失函数：交叉熵损失，是基于像素的分类任务

5）全场景分割：80种object类别，91种stuff类别，1种其他类，共172种类别

6）人体姿势估计：