실전 프로젝트 실습 1 – CenterNet을 이용한 License Plate Detector 실습
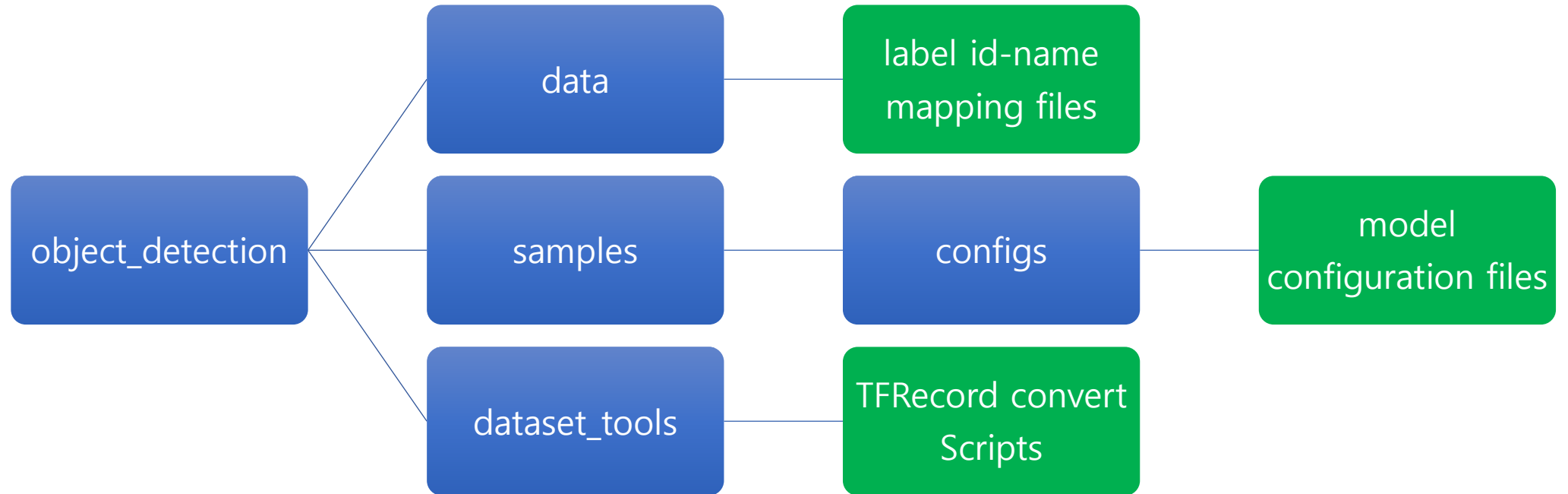
- CenterNet 모델을 License Plate Dataset에 적합한 파라미터로 Fine-Tuning 해봅시다.

① Training

② Evaluate

③ Inference

AI
School.

Object Detection API 구조

TensorFlow Object Detection API에서 제공하는 다양한 Object Detection을 위한 최신 모델들

- TensorFlow Object Detection API는 다음과 같은 최신 Object Detection 모델의 다양한 backbone을 이용한 구현을 제공합니다.

① Faster R-CNN

② SSD(Single Shot Multi-box Detector)

③ RetinaNet

④ CenterNet

⑤ EfficientDet

AI
School.

TensorFlow 2.0 detection model zoo

- https://github.com/tensorflow/models/blob/master/research/object_detection/g3doc/tf2_detection_zoo.md

TensorFlow 2 Detection Model Zoo

`TensorFlow 2.2` `Python 3.6`

We provide a collection of detection models pre-trained on the COCO 2017 dataset. These models can be useful for out-of-the-box inference if you are interested in categories already in those datasets. You can try it in our inference colab

They are also useful for initializing your models when training on novel datasets. You can try this out on our few-shot training colab.

Finally, if you would like to train these models from scratch, you can find the model configs in this directory (also in the linked `tar.gz` s).

Model name	Speed (ms)	COCO mAP	Outputs
CenterNet HourGlass104 512x512	70	41.9	Boxes
CenterNet HourGlass104 Keypoints 512x512	76	40.0/61.4	Boxes/Keypoints
CenterNet HourGlass104 1024x1024	197	44.5	Boxes
CenterNet HourGlass104 Keypoints 1024x1024	211	42.8/64.5	Boxes/Keypoints
CenterNet Resnet50 V1 FPN 512x512	27	31.2	Boxes
CenterNet Resnet50 V1 FPN Keypoints 512x512	30	29.3/50.7	Boxes/Keypoints
CenterNet Resnet101 V1 FPN 512x512	34	34.2	Boxes
CenterNet Resnet50 V2 512x512	27	29.5	Boxes
CenterNet Resnet50 V2 Keypoints 512x512	30	27.6/48.2	Boxes/Keypoints
EfficientDet D0 512x512	39	33.6	Boxes

AI School.

License Plate Detection Dataset

- https://drive.google.com/file/d/1beC78HplB3k8bfxE6wPamcvu6aMYjrna/view
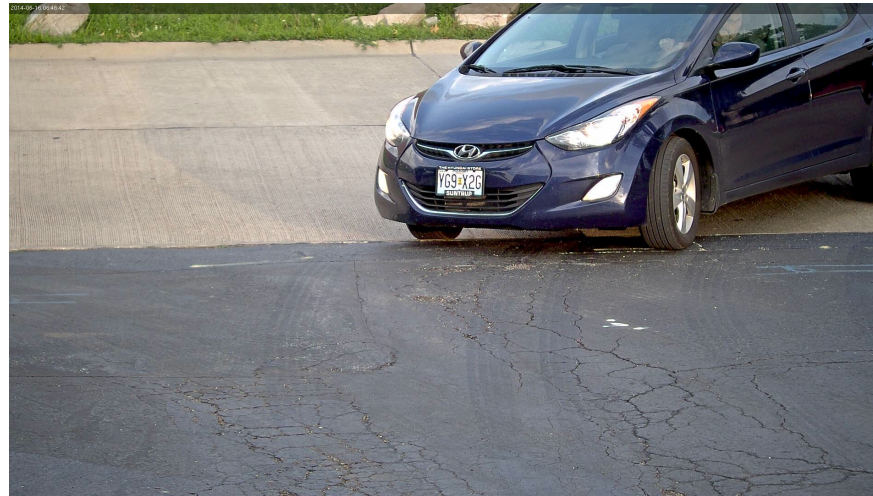
License Plate Dataset

① Image:

② Annotation:

0b86cecf-67d1-4fc0-87c9-b36b0ee228bb.jpg   935   362   99   49   YG9X2G

filename x_min y_min width height OcrLabel

→

x_min y_min (x_min+width) (y_min+height)

Thank you!

AI
School.