

TRAINING CUSTOM MODEL



YOLOv3_custom2.cfg - Text Editor × | New Tab × | YOLOv3_Tutorial.ipynb - Colaboratory × | GitHub - theAIGuysCode/OIDv4_ToolKit

Code/OIDv4_ToolKit

Why GitHub? Team Enterprise Explore Marketplace Pricing Search

Projects Wiki Security Insights

master 1 branch 0 tags Go to file Code

This branch is 7 commits ahead of EscVM:master. #3 Compare

theAIGuysCode Updated to work on multiclass labels. 36d50ed on Mar 2, 2020 62 commits

images	Add bbox explanation	3 years ago
modules	Fix small typo	16 months ago
.gitignore	CDL: adding standard Python .gitignore, and removing .pyc files. Fixes ...	2 years ago
LICENSE	Initial commit	3 years ago
README.md	Update README.md	16 months ago
classes.txt	Update	3 years ago
convert_annotations.py	Updated to work on multiclass labels.	14 months ago
main.py	Added -y option (Answer yes) and update README.md	2 years ago
requirements.txt	Remove random line breaks	16 months ago

README.md

Forked repository and added conversion python script

My added script is: `convert_annotations.py`
Use toolkit normally to gather images from open images dataset. After gathering images just run from root directory:

```
python convert_annotations.py
```

About
Download and multiple classes Images v4 dataset
Readme
GPL-3.0 License

Releases
No releases published

Packages
No packages published

Languages
Python 100.0%

OIDV4_TOOLKIT

https://github.com/theAIGuysCode/OIDv4_ToolKit.git

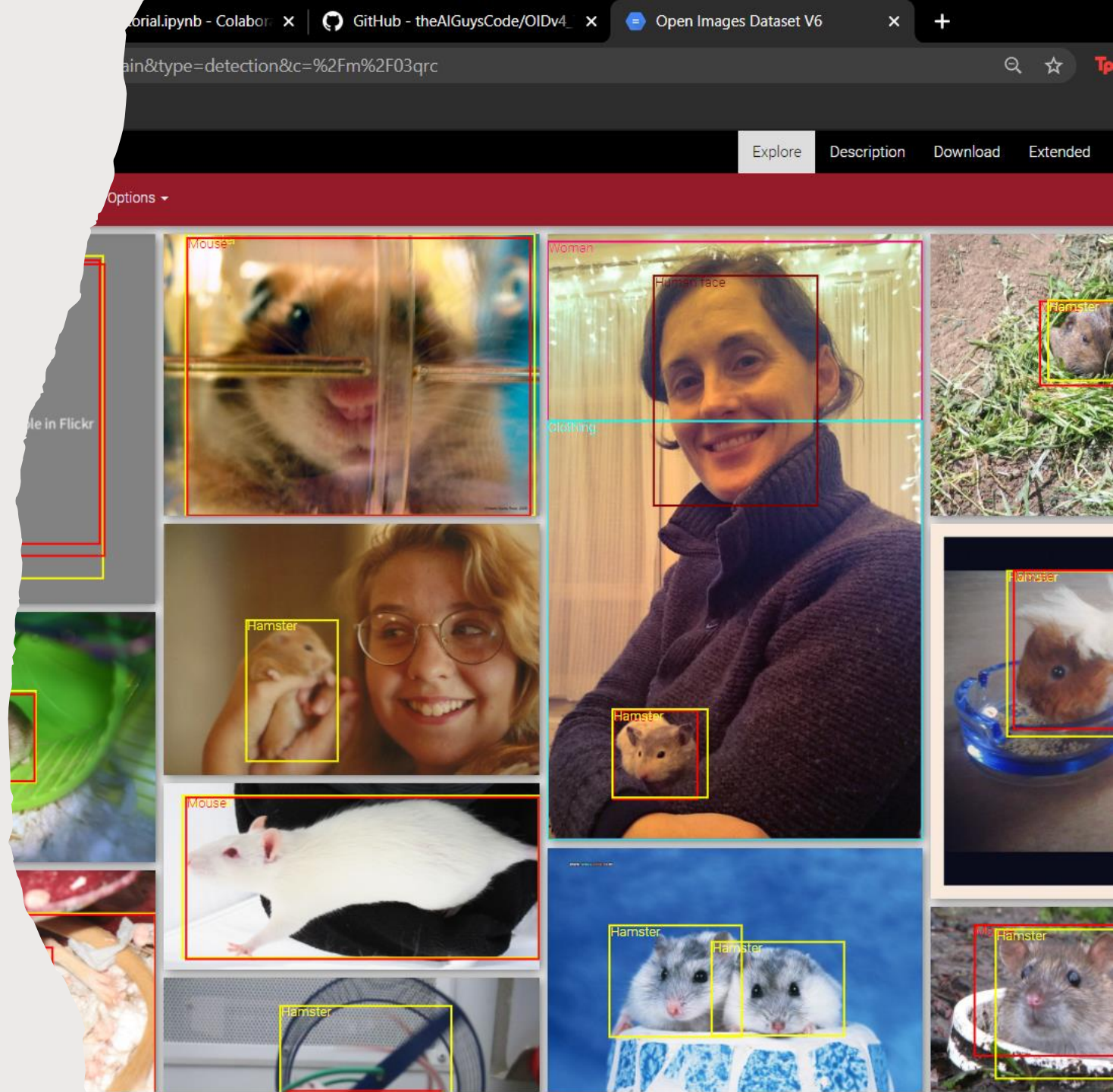
INSTAL REQUIREMENTS:

1. pandas
2. numpy
3. awscli
4. urllib3
5. tqdm
6. opencv-python

`pip install -r requirements.txt`

OPEN IMAGES DATASET V6

```
python main.py downloader --classes
Elephant Giraffe --type_csv train --limit
200
```

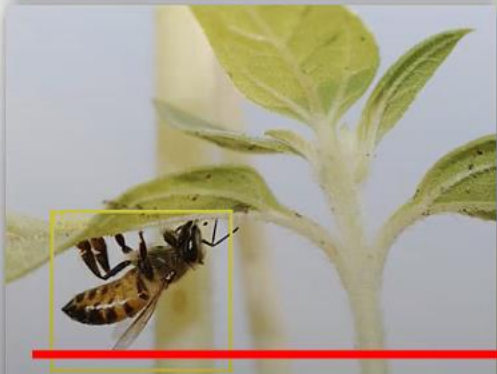
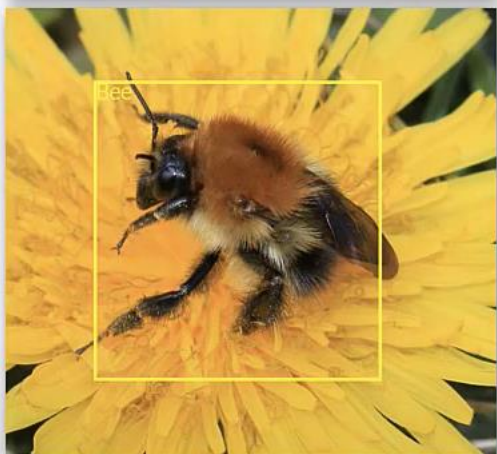
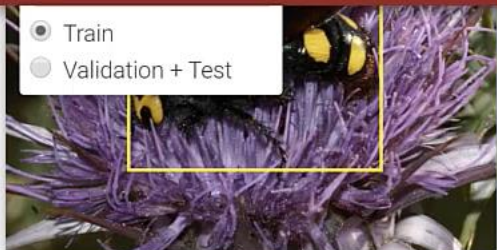


Subset ▾ Type: Detection ▾

Cate

Windows PowerShell

☒ Train
☐ Validation + Test



OIDv4 Downloader

[INFO] | Downloading Balloon.

-----Balloon-----

[INFO] | Downloading train images.
[INFO] | [INFO] Found 3262 online images for train.
[INFO] | Limiting to 400 images.
[INFO] | Download of 400 images in train.

100% | 400/400 [02:38<00:00, 2.52it/s]]

[INFO] | Done!
[INFO] | Creating labels for Balloon of train.
[INFO] | Labels creation completed.
[INFO] | Downloading Airplane.

-----Airplane-----

[INFO] | Downloading train images.
[INFO] | [INFO] Found 12003 online images for train.
[INFO] | Limiting to 400 images.
[INFO] | Download of 400 images in train.

100% | 400/400 [02:40<00:00, 2.49it/s]]

[INFO] | Done!
[INFO] | Creating labels for Airplane of train.
[INFO] | Labels creation completed.

PS C:\Repos\OIDv4_ToolKit>



Bee

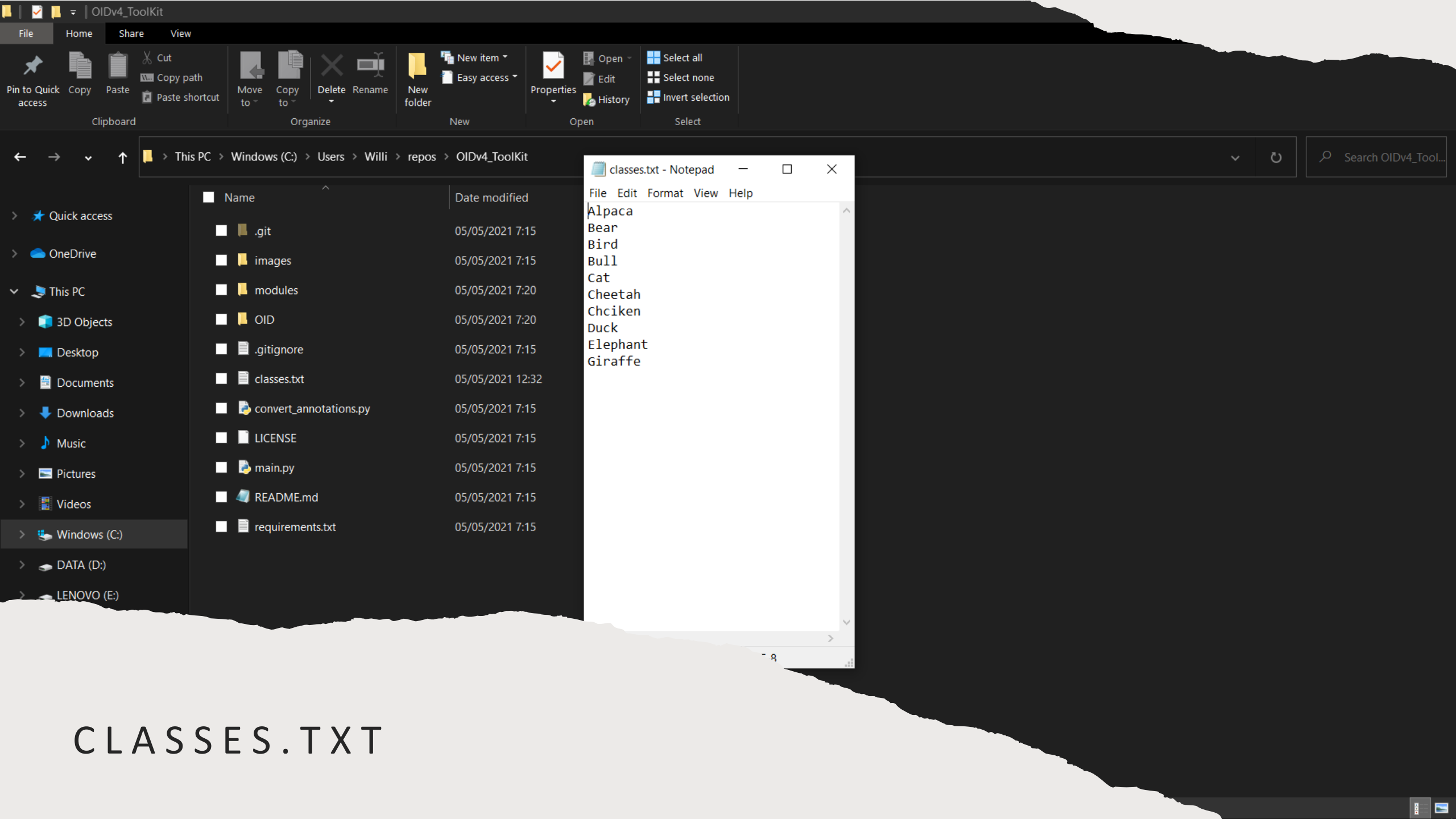


left X | top Y

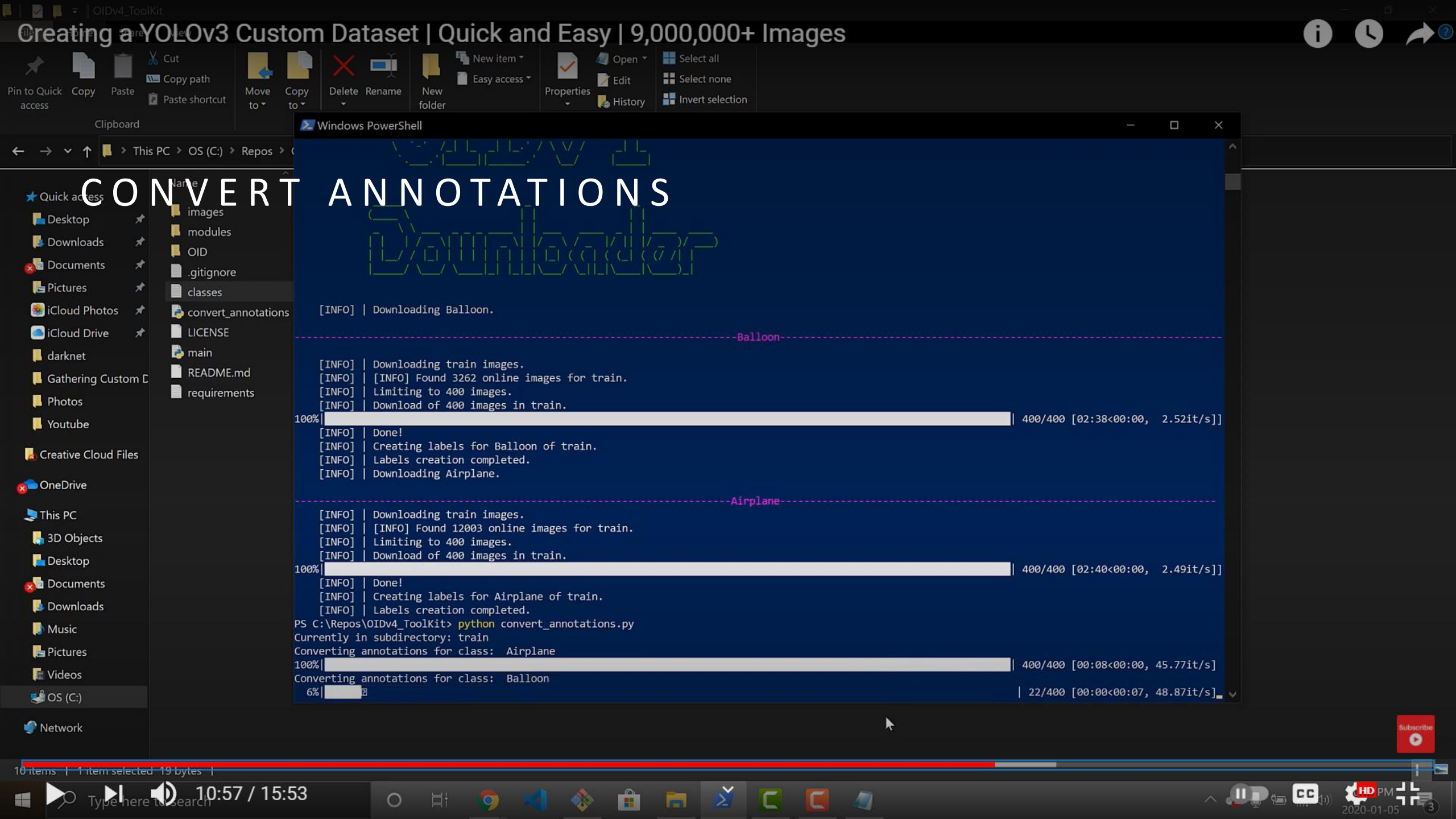


right X | bottom Y

- name_of_the_class
left top right bottom



CLASSES.TXT



CONVERT ANNOTATIONS

```
Windows PowerShell

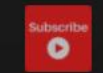
[INFO] | Downloading Balloon.

-----Balloon-----

[INFO] | Downloading train images.
[INFO] | [INFO] Found 3262 online images for train.
[INFO] | Limiting to 400 images.
[INFO] | Download of 400 images in train.
100%|████████████████████████████████████████████████████████████████████████████████| 400/400 [02:38<00:00, 2.52it/s]]
[INFO] | Done!
[INFO] | Creating labels for Balloon of train.
[INFO] | Labels creation completed.
[INFO] | Downloading Airplane.

-----Airplane-----

[INFO] | Downloading train images.
[INFO] | [INFO] Found 12003 online images for train.
[INFO] | Limiting to 400 images.
[INFO] | Download of 400 images in train.
100%|████████████████████████████████████████████████████████████████████████████████| 400/400 [02:40<00:00, 2.49it/s]]
[INFO] | Done!
[INFO] | Creating labels for Airplane of train.
[INFO] | Labels creation completed.
PS C:\Repos\OIDv4_ToolKit> python convert_annotations.py
Currently in subdirectory: train
Converting annotations for class: Airplane
100%|████████████████████████████████████████████████████████████████████████████████| 400/400 [00:08<00:00, 45.77it/s]
Converting annotations for class: Balloon
6%|██████████| 22/400 [00:00<00:07, 48.87it/s]
```



INSERT ALL TO ONE FOLDER

- `python main.py downloader --classes Elephant Giraffe --type_csv train --limit 200 --multiclass`
1



AlexeyAB / darknet

forked from pjreddie/darknet

Sponsor

Notifications

Star

15.9k

Fork

16.9k

Code Issues 4.8k Pull requests 67 Discussions Actions Projects 7 Wiki Security Insights

master 1 branch 6 tags

Go to file

Code

This branch is 1814 commits ahead, 120 commits behind pjreddie:master.

#7650 Compare

yildbs gaussian_yolo_layer truth size mismatch fixed due to the update of tr... e2a1287 10 days ago 2,141 commits

.circleci	minor fix	last month
.github	almost revert last PR (#7634)	13 days ago
3rdparty	x64 only	2 years ago
build/darknet	Minor fix for cfg-files	5 months ago
cfg	Minor fix for cfg-files	5 months ago
cmake/Modules		

About

YOLOv4 / Scaled-YOLOv4 / YOLO - Neural Networks for Object Detection (Windows and Linux version of Darknet)

pjreddie.com/darknet/

deep-neural-networks

computer-vision

deep-learning

neural-network

dnn

yolo

object-detection

deep-learning-tutorial

yolov3

yolov4

scaledyolov4

scaled-yolov4

Readme

DARKNET

HTTPS://GITHUB.COM/ALEXEYAB/DARKNET.GIT

MOVE MULTICLASSES TO DARKNET

CUSTOM CONFIG FILE

- Obj.names
- Obj.data

```
Selection View Go Run Terminal Help
obj.names  obj.data  generate_train.py  yolo3-custom.cfg X
yolo3-custom.cfg
[net]
# Testing
# batch=1
# subdivisions=1
# Training
batch=64
subdivisions=16
width=416
height=416
channels=3
momentum=0.9
decay=0.0005
angle=0
saturation = 1.5
exposure = 1.5
hue=.1

learning_rate=0.001
burn_in=1000
max_batches = 20000
policy=steps
steps=16000,18000
scales=.1,.1

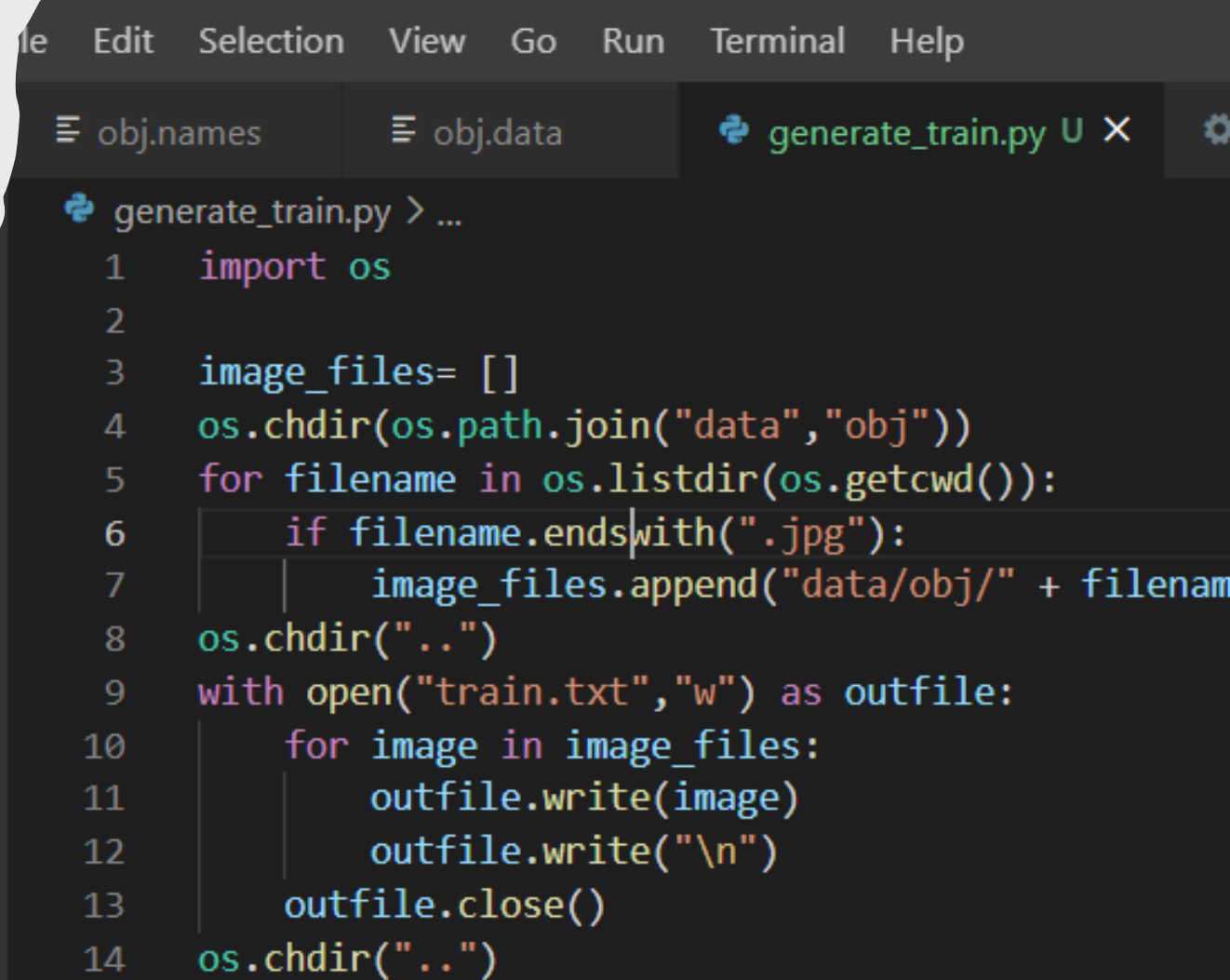
[convolutional]
batch_normalize=1
filters=32
size=3
stride=1
pad=1
activation=leaky

# Downsample

[convolutional]
batch_normalize=1
filters=64
size=3
stride=2
```


LIST OF FILE PATH

- Python generate_train.py



The image shows a code editor window with a dark theme. The menu bar at the top includes File, Edit, Selection, View, Go, Run, Terminal, and Help. Below the menu bar, there are three tabs: obj.names, obj.data, and generate_train.py (which is active and highlighted in green). The code in the generate_train.py tab is as follows:

```
generate_train.py > ...
1  import os
2
3  image_files= []
4  os.chdir(os.path.join("data","obj"))
5  for filename in os.listdir(os.getcwd()):
6      if filename.endswith(".jpg"):
7          image_files.append("data/obj/" + filename)
8  os.chdir("..")
9  with open("train.txt","w") as outfile:
10     for image in image_files:
11         outfile.write(image)
12         outfile.write("\n")
13     outfile.close()
14  os.chdir("..")
```

fxoao6qNFbhfV3u28tG8jAVGk#scrollTo=HdRrgahokRJv

an disimpan

In the File Explorer on the left side of your notebook.

you can access it from your darknet command by running.

ur image name>

ded an image called street.jpg, you can

o run the detections command!

ghts ../street.jpg

and easily have detections run on them.

le drive into the cloud VM so that you can access its contents. It is that easy!

content/gdrive/My\ Drive/" and '/mydrive.

ap to the contents within the folder '[/content/gdrive/My\ Drive/](#)'.

'Drive' folder path can cause issues when running certain commands. This

the darknet command:

Tidak dapat tersambung ke backend GPU

Saat ini Anda tidak dapat tersambung ke GPU karena batas penggunaan di Colab. [Pelajari lebih lanjut](#)

TUTUP

SAMBUNGAN TANPA GPU

TRAINING CUSTOM DATASET

YOLOv3_Tutorial.ipynb ☆

Edit Lihat Sisipkan Runtime Fitur Bantuan Tidak dapat menyimpan perubahan

+ Teks Salin ke Drive

book

8

```
# train your custom detector
!./darknet detector train data/obj.data cfg/yolov3_custom.cfg darknet53.conv.74 -dont_show

v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 82 Avg (IOU: 0.811671), count: 2, class_loss = 0.014347, iou_loss = 0.014347, total_bbox = 244625, rewritten_bbox = 0.529382 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 94 Avg (IOU: 0.776168), count: 1, class_loss = 0.240217, iou_loss = 0.240217, total_bbox = 244625, rewritten_bbox = 0.529382 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 106 Avg (IOU: 0.490427), count: 2, class_loss = 0.438460, iou_loss = 0.438460, total_bbox = 244625, rewritten_bbox = 0.529382 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 82 Avg (IOU: 0.784756), count: 8, class_loss = 0.916112, iou_loss = 0.916112, total_bbox = 244633, rewritten_bbox = 0.529364 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 94 Avg (IOU: 0.000000), count: 1, class_loss = 0.000180, iou_loss = 0.000180, total_bbox = 244633, rewritten_bbox = 0.529364 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 106 Avg (IOU: 0.000000), count: 1, class_loss = 0.000001, iou_loss = 0.000001, total_bbox = 244633, rewritten_bbox = 0.529364 %)

2538: 0.292201, 0.380232 avg loss, 0.001000 rate, 4.874836 seconds, 162432 images, 23.671825 hours left
Loaded: 0.000040 seconds
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 82 Avg (IOU: 0.772563), count: 6, class_loss = 0.493874, iou_loss = 0.493874, total_bbox = 244639, rewritten_bbox = 0.529351 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 94 Avg (IOU: 0.000000), count: 1, class_loss = 0.002154, iou_loss = 0.002154, total_bbox = 244639, rewritten_bbox = 0.529351 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 106 Avg (IOU: 0.000000), count: 1, class_loss = 0.000002, iou_loss = 0.000002, total_bbox = 244639, rewritten_bbox = 0.529351 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 82 Avg (IOU: 0.811616), count: 2, class_loss = 0.011123, iou_loss = 0.011123, total_bbox = 244642, rewritten_bbox = 0.529345 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 94 Avg (IOU: 0.000000), count: 1, class_loss = 0.000135, iou_loss = 0.000135, total_bbox = 244642, rewritten_bbox = 0.529345 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 106 Avg (IOU: 0.543764), count: 1, class_loss = 0.139427, iou_loss = 0.139427, total_bbox = 244642, rewritten_bbox = 0.529345 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 82 Avg (IOU: 0.711417), count: 4, class_loss = 0.514979, iou_loss = 0.514979, total_bbox = 244647, rewritten_bbox = 0.529334 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 94 Avg (IOU: 0.819860), count: 1, class_loss = 0.206660, iou_loss = 0.206660, total_bbox = 244647, rewritten_bbox = 0.529334 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 106 Avg (IOU: 0.000000), count: 1, class_loss = 0.000094, iou_loss = 0.000094, total_bbox = 244647, rewritten_bbox = 0.529334 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 82 Avg (IOU: 0.782382), count: 6, class_loss = 0.385490, iou_loss = 0.385490, total_bbox = 244653, rewritten_bbox = 0.529321 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 94 Avg (IOU: 0.000000), count: 1, class_loss = 0.002272, iou_loss = 0.002272, total_bbox = 244653, rewritten_bbox = 0.529321 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 106 Avg (IOU: 0.000000), count: 1, class_loss = 0.000053, iou_loss = 0.000053, total_bbox = 244653, rewritten_bbox = 0.529321 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 82 Avg (IOU: 0.777918), count: 4, class_loss = 0.390591, iou_loss = 0.390591, total_bbox = 244657, rewritten_bbox = 0.529312 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 94 Avg (IOU: 0.000000), count: 1, class_loss = 0.004017, iou_loss = 0.004017, total_bbox = 244657, rewritten_bbox = 0.529312 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 106 Avg (IOU: 0.000000), count: 1, class_loss = 0.000016, iou_loss = 0.000016, total_bbox = 244657, rewritten_bbox = 0.529312 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 82 Avg (IOU: 0.818289), count: 3, class_loss = 0.403503, iou_loss = 0.403503, total_bbox = 244661, rewritten_bbox = 0.529304 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 94 Avg (IOU: 0.789198), count: 1, class_loss = 0.029980, iou_loss = 0.029980, total_bbox = 244661, rewritten_bbox = 0.529304 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 106 Avg (IOU: 0.000000), count: 1, class_loss = 0.000017, iou_loss = 0.000017, total_bbox = 244661, rewritten_bbox = 0.529304 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 82 Avg (IOU: 0.935083), count: 2, class_loss = 0.124401, iou_loss = 0.124401, total_bbox = 244664, rewritten_bbox = 0.529297 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 94 Avg (IOU: 0.830299), count: 1, class_loss = 0.120579, iou_loss = 0.120579, total_bbox = 244664, rewritten_bbox = 0.529297 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 106 Avg (IOU: 0.000000), count: 1, class_loss = 0.000014, iou_loss = 0.000014, total_bbox = 244664, rewritten_bbox = 0.529297 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 82 Avg (IOU: 0.723586), count: 3, class_loss = 0.265494, iou_loss = 0.265494, total_bbox = 244664, rewritten_bbox = 0.529297 %)
v3 (mse loss, Normalizer: (iou: 0.75, obj: 1.00, cls: 1.00) Region 94 Avg (IOU: 0.000000), count: 1, class_loss = 0.000026, iou_loss = 0.000026, total_bbox = 244664, rewritten_bbox = 0.529297 %)
```


CONCLUSION

- **YOLOv3** adalah salah satu state-of-the-art tercepat dan akurat, deep convolutional neural network dan memungkinkan kita untuk perform object detection dan juga real-time tracking software yang menggunakan deeplearning association matrix dan akan digabungkan dengan tensorflow untuk membuat real-time object tracker yang lebih baik
- Keuntungan **YOLO**
 1. Extremely fast(since **YOLO** frame detection as a regression problem, jadi tidak membutuhkan pipeline yang kompleks). Simply menjalankan neural network pada gambar baru di test time untuk prediksi detection.
 2. YOLO mencapai lebih dari 2 kali mean/rata-rata precision dari real-time sistem lainnya

REFERENCES

- https://www.youtube.com/watch?v=10joRJt39Ns&ab_channel=TheAIGuy
- [https://pjreddie.com/darknet/yolo/#:~:text=You%20only%20look%20once%20\(YOLO,%25%20on%20COCO%20test%2Ddev.](https://pjreddie.com/darknet/yolo/#:~:text=You%20only%20look%20once%20(YOLO,%25%20on%20COCO%20test%2Ddev.)
- <https://arxiv.org/abs/1506.02640>