



Training YOLO v3 for Object Detection with Custom Data

Downloading images

Downloading images from huge Open Images Dataset

By using already installed *OIDv4 toolkit* in previous lecture, download images for training with following steps.

Activate your *Python v3* environment and go to the directory with *OIDv4 toolkit*. You can list all available sub-directories in the current directory by using following command in *Terminal* (or *Anaconda Prompt*):

```
dir
```

It will show all sub-directories you can go in, including **OIDv4_ToolKit**. Go inside this directory by using following command in *Terminal* (or *Anaconda Prompt*):

```
cd OIDv4_ToolKit
```

Pay attention, letter **K** in the name of directory is capital.

List possible options by following command in *Terminal* (or *Anaconda Prompt*):

```
python3 main.py
```

or:

```
python main.py
```

or use detailed explanation of usage by following command:

```
python3 main.py -h
```

or:

```
python main.py -h
```

Download images

To start download images, run following command in *Terminal* (or *Anaconda Prompt*):

```
python3 main.py downloader --classes Car Bicycle_wheel Bus --type_csv train --multiclass 1 --limit 800
```

or:

```
python main.py downloader --classes Car Bicycle_wheel Bus --type_csv train --multiclass 1 --limit 800
```

Used arguments in the example above:

- **--classes *Car Bicycle_wheel Bus***
names of the classes (pay attention, here we have class name that consists of two words and we need to use bottom dash character to connect them instead of using the space)
- **--type_csv *train***
specifying the type of dataset (train, validation and test; or all)
- **--multiclass *1***
specifying that all classes will be downloaded together in one folder
- **--limit *800***
specifying the number of images that will be downloaded for every class

Verify by visualizer

In order to verify annotations, simply launch **visualizer** that will show images and bounding boxes, by following command in *Terminal* (or *Anaconda Prompt*):

```
python3 main.py visualizer
```

or:

```
python main.py visualizer
```

Follow the prompts and type needed folder which is **train** in the example above and needed class to visualize which is the name of the folder that contains all three classes **Car_Bicycle_wheel_Bus**. By using **d** and **a** go next and previous between images. By using **q** exit from the visualizer.

Useful Links

Check out these links with official resources for *OIDv4 toolkit* as well as the link to *Open Images Dataset*:

- [1] [OIDv4 ToolKit](#) – official resource with full description
- [2] [Open Images Dataset](#) – publicly available huge dataset with labelled images from 600 classes