10. YOLO 나도 해볼까

AI ROBOT

Exported on 06/16/2021

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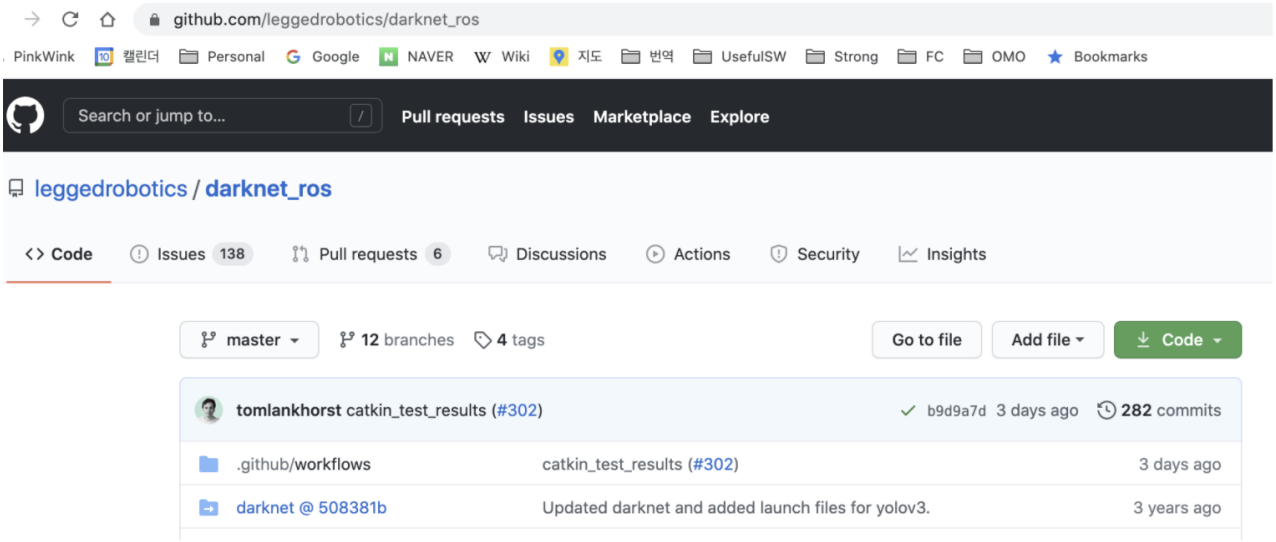
1 YOLO를 아시나요

1.1 Darkros



1.2 git clone

```
r1mini@omo:~/catkin_ws/src$
r1mini@omo:~/catkin_ws/src$
r1mini@omo:~/catkin_ws/src$ sudo git clone --recursive https://github.com/PinkWink/darknet_ros
Cloning into 'darknet_ros'...
remote: Enumerating objects: 13, done.
remote: Counting objects: 100% (13/13), done.
remote: Compressing objects: 100% (13/13), done.
remote: Total 3065 (delta 2), reused 0 (delta 0), pack-reused 3052
Receiving objects: 100% (3065/3065), 131.44 MiB | 7.44 MiB/s, done.
Resolving deltas: 100% (1419/1419), done.
Submodule 'darknet' (https://github.com/pjreddie/darknet) registered for path 'darknet'
Cloning into '/home/r1mini/catkin_ws/src/darknet_ros/darknet'...
remote: Enumerating objects: 5931, done.
remote: Total 5931 (delta 0), reused 0 (delta 0), pack-reused 5931
Receiving objects: 100% (5931/5931), 6.34 MiB | 3.72 MiB/s, done.
Resolving deltas: 100% (3922/3922), done.
```

1.3 빌드

```
r1mini@omo:~/catkin_ws/src$
r1mini@omo:~/catkin_ws/src$ cd ..
r1mini@omo:~/catkin_ws$ catkin build darknet_ros
------------------------------------------------------------
Profile:                     default
Extending:          [cached] /opt/ros/melodic
Workspace:                   /home/r1mini/catkin_ws
------------------------------------------------------------
Build Space:        [exists] /home/r1mini/catkin_ws/build
Devel Space:        [exists] /home/r1mini/catkin_ws/devel
Install Space:      [unused] /home/r1mini/catkin_ws/install
Log Space:          [exists] /home/r1mini/catkin_ws/logs
Source Space:       [exists] /home/r1mini/catkin_ws/src
DESTDIR:            [unused] None
------------------------------------------------------------
```

1.4 source ~/.bashrc

```
r1mini@omo:~/catkin_ws$
r1mini@omo:~/catkin_ws$ source ~/.bashrc

r1mini@omo:~/catkin_ws$
r1mini@omo:~/catkin_ws$
r1mini@omo:~/catkin_ws$
```

1.5 yolo_network_config 폴더로 이동

```
r1mini@omo:~$
r1mini@omo:~$ cd ~/catkin_ws/src/darknet_ros/darknet_ros/yolo_network_config/
r1mini@omo:~/catkin_ws/src/darknet_ros/darknet_ros/yolo_network_config$ ls
cfg  weights
r1mini@omo:~/catkin_ws/src/darknet_ros/darknet_ros/yolo_network_config$
r1mini@omo:~/catkin_ws/src/darknet_ros/darknet_ros/yolo_network_config$
```

1.6 weights 폴더로 이동

```
r1mini@omo:~/catkin_ws/src/darknet_ros/darknet_ros/yolo_network_config$
r1mini@omo:~/catkin_ws/src/darknet_ros/darknet_ros/yolo_network_config$
r1mini@omo:~/catkin_ws/src/darknet_ros/darknet_ros/yolo_network_config$ cd weights/
r1mini@omo:~/catkin_ws/src/darknet_ros/darknet_ros/yolo_network_config/weights$
```

1.7 sudo wget http://pjreddie.com/media/files/yolov3.weights

```
r1mini@omo:~/catkin_ws/src/darknet_ros/darknet_ros/yolo_network_config/weights$ sudo wget http://pjreddie.com/media/fi
les/yolov3-tiny.weights
URL transformed to HTTPS due to an HSTS policy
--2021-02-16 21:33:02--  https://pjreddie.com/media/files/yolov3-tiny.weights
Resolving pjreddie.com (pjreddie.com)... 128.208.4.108
Connecting to pjreddie.com (pjreddie.com)|128.208.4.108|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 35434956 (34M) [application/octet-stream]
Saving to: 'yolov3-tiny.weights'

yolov3-tiny.weights          100%[=========================================>]  33.79M  3.01MB/s    in 9.1s

2021-02-16 21:33:12 (3.73 MB/s) - 'yolov3-tiny.weights' saved [35434956/35434956]
```

1.8 roscore와 camera를 실행한다

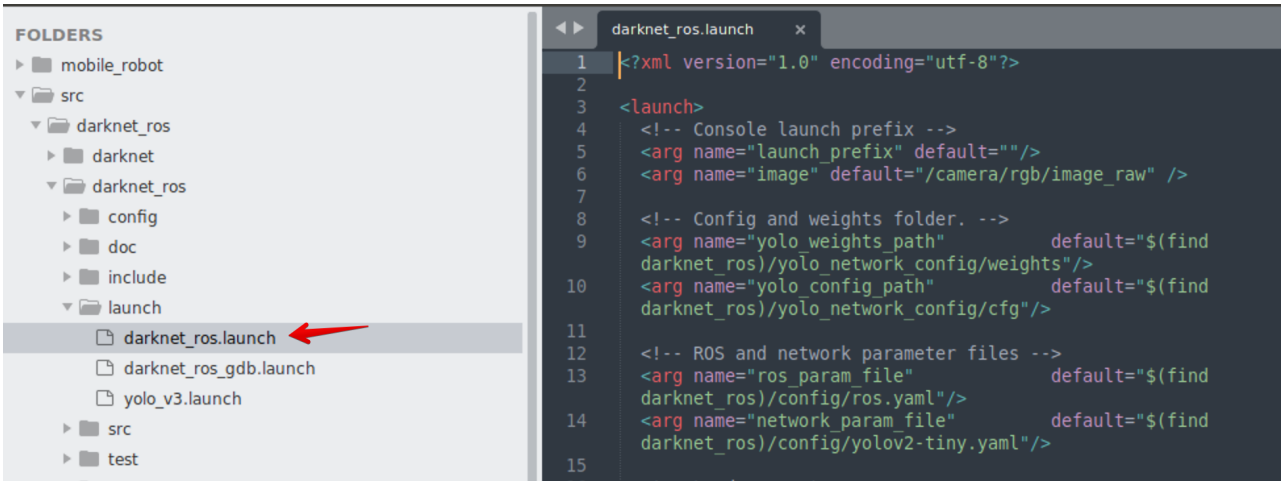
```
pw@pw:~/catkin_ws$ roscore
... logging to /home/pw/.ros/log/99c52c26-ce42-11eb-9de6-001c42da8f26/roslaunch-
pw-19989.log
Checking log directory for disk usage. This may take a while.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://pw:40909/
ros_comm version 1.14.11


SUMMARY
========
```

```
pw@pw:~$ rosrun cv_camera cv_camera_node
[ INFO] [1623807111.677276643]: using default calibration URL
[ INFO] [1623807111.678403394]: camera calibration URL: file:///home/pw/.ros/cam
era_info/camera.yaml
[ INFO] [1623807111.678614644]: Unable to open camera calibration file [/home/pw
```

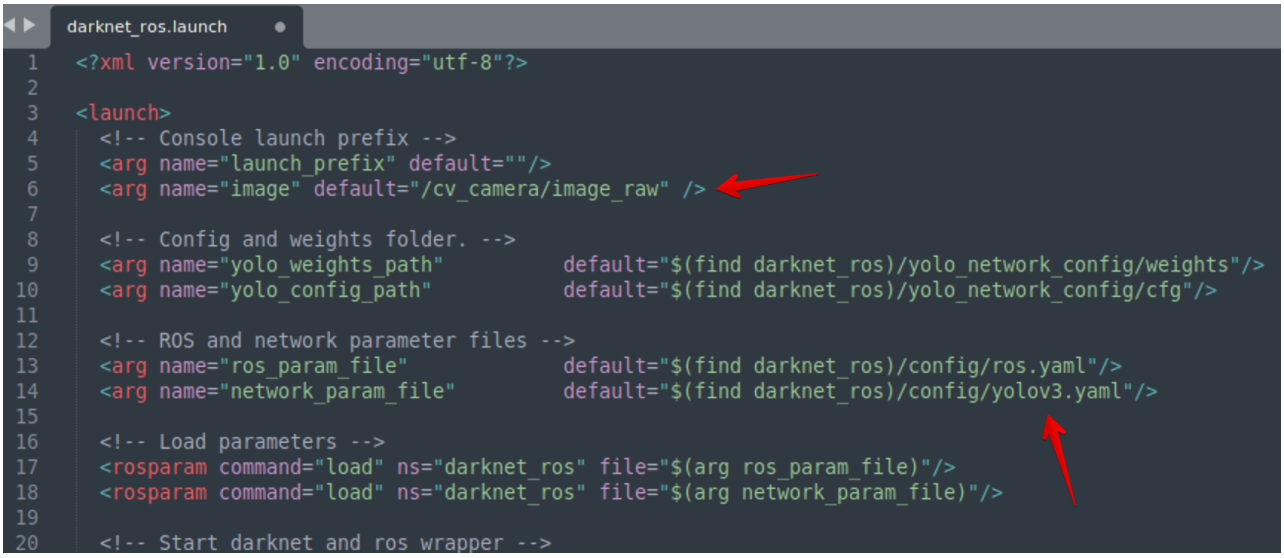
1.9 카메라 토픽 이름을 확인해 둔다

```
pw@pw:~$ rostopic list
/cv_camera/camera_info
/cv_camera/image_raw
/cv_camera/image_raw/compressed
/cv_camera/image_raw/compressed/parameter_descriptions
/cv_camera/image_raw/compressed/parameter_updates
/cv_camera/image_raw/compressedDepth
```

1.10 darknet_ros.launch를 연다

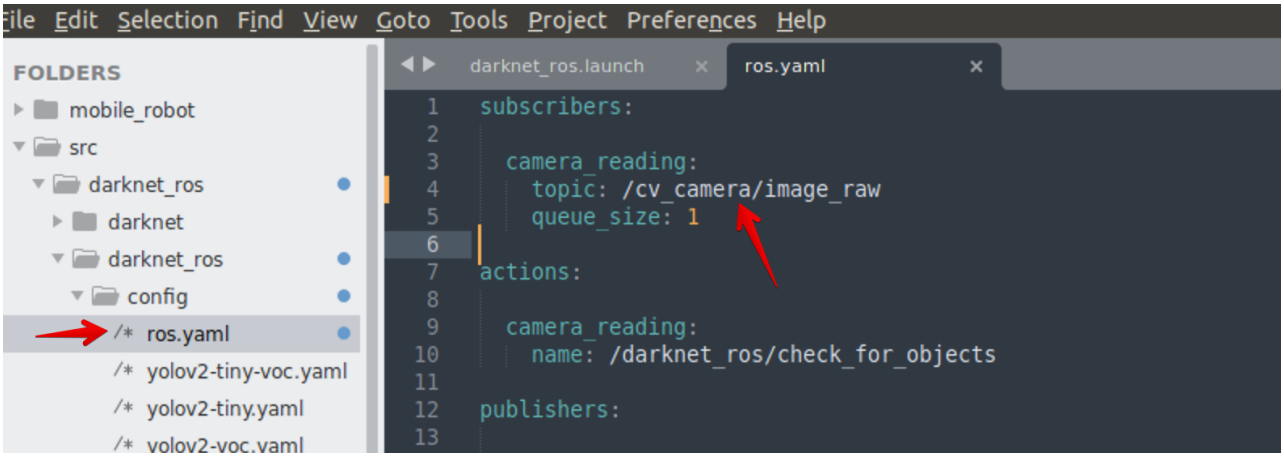


1.11 두군데 수정

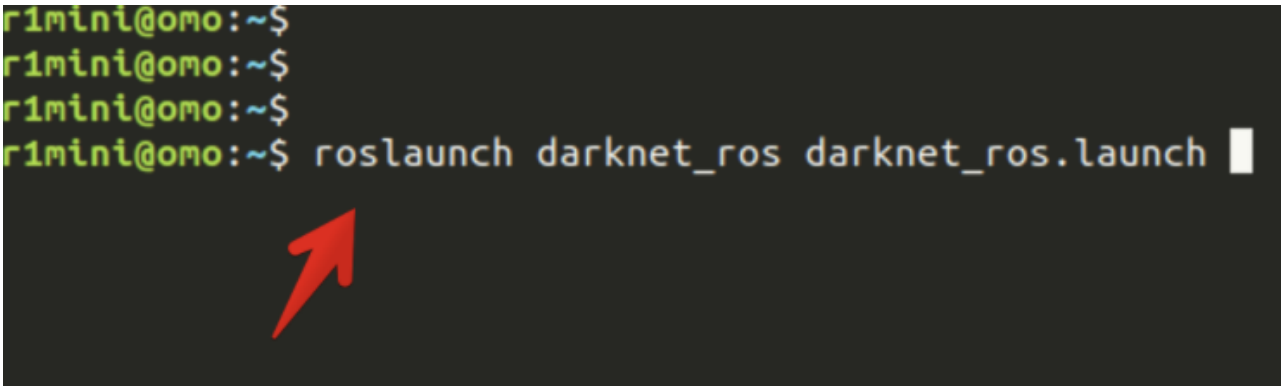


1.12 여기까지 세 군데

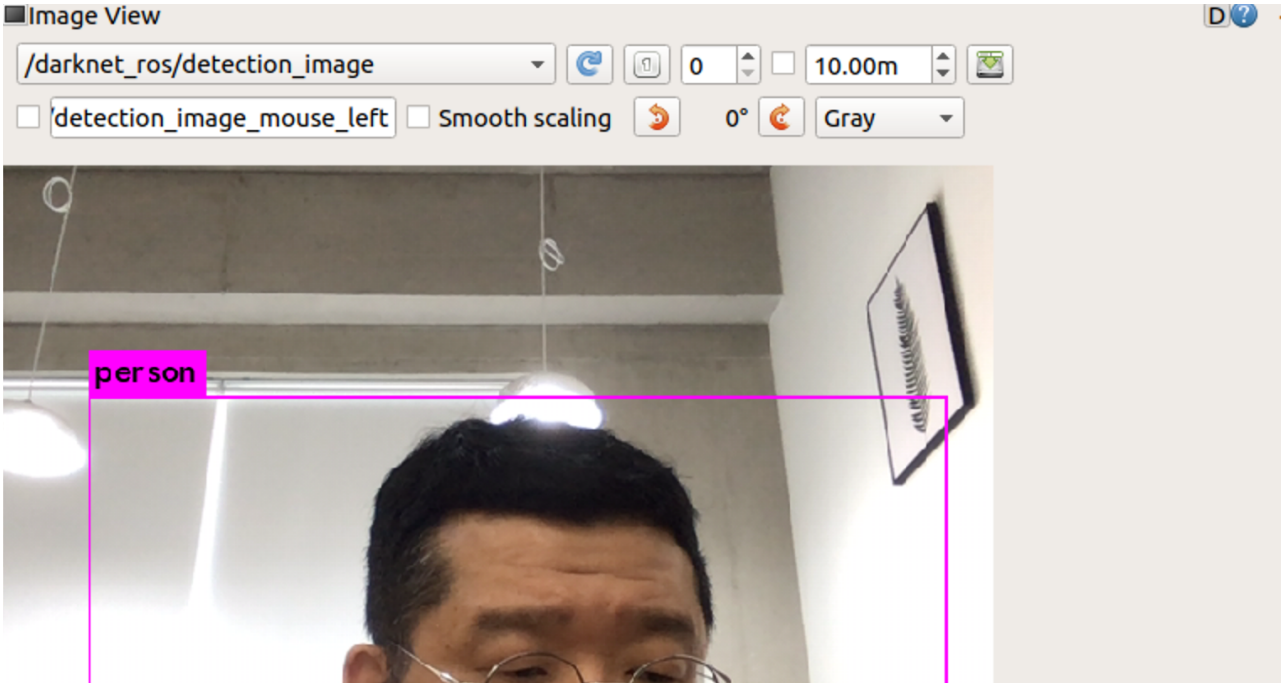
1.13 ros.yaml에서 한 군데 수정



1.14 darknet_ros 실행



1.15 rqt_image_view



1.16 만약 pc 성능의 문제가 발생한다면

- yolov3 → yolov3-tiny로 변경한다