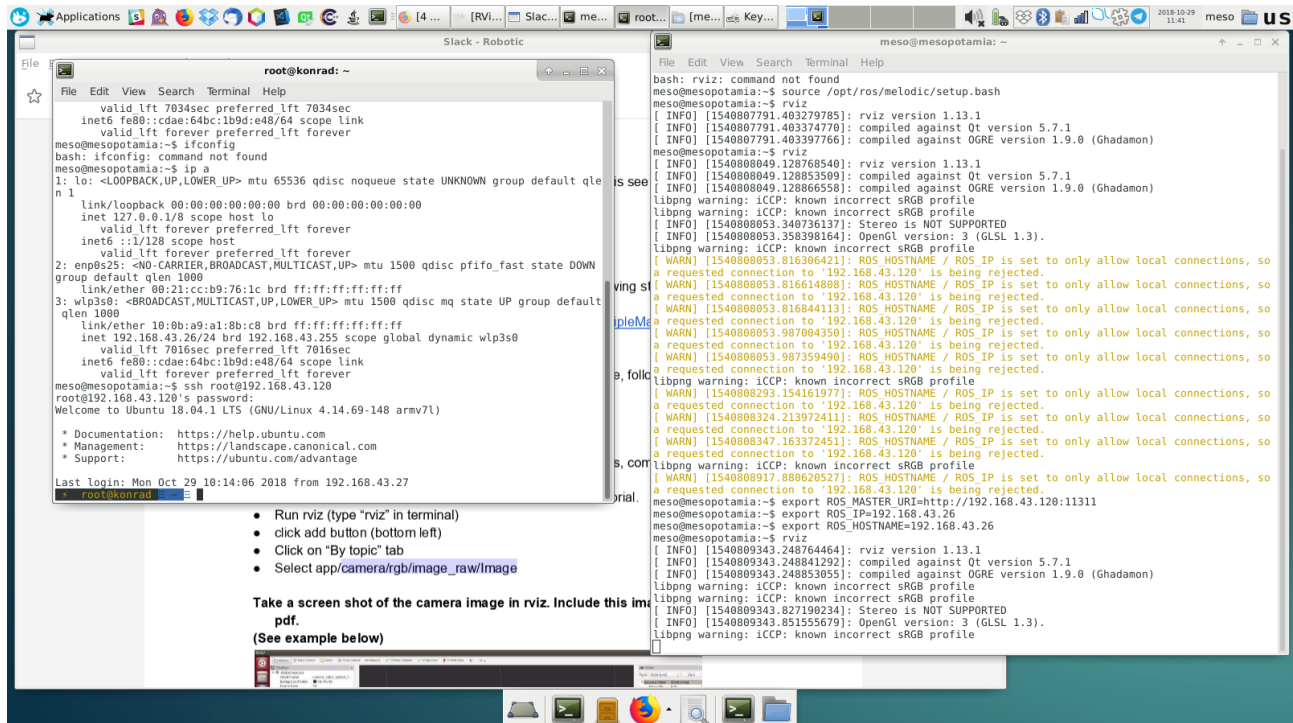


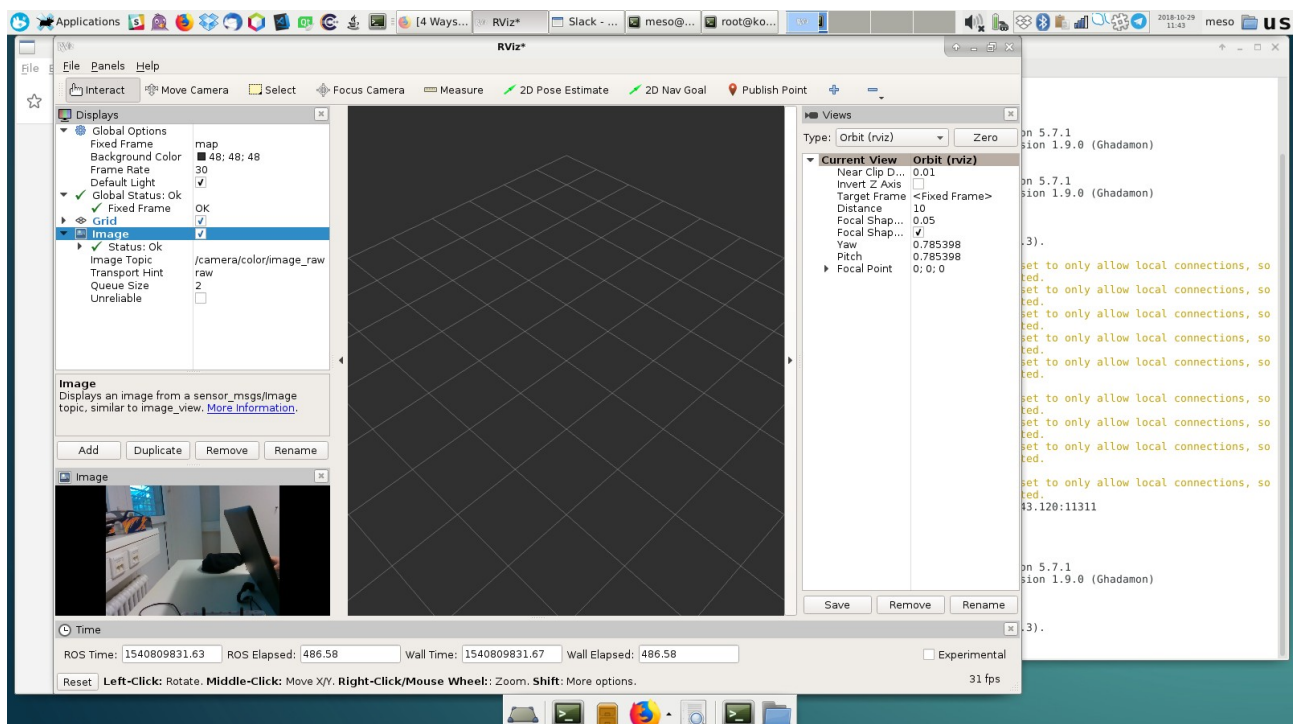
Robotic WS 18-19  
Gruppe: RoboticABL  
Bearbeiter: Abbas M.Murrey  
Benjamin Kahl  
Pham Hoang Long Dang

## Assignment 2

### Aufgabe 1/ connect to the car and set up enviroments



Show the image from the model car via RVIZ:



## Aufgabe 2/

Setting up package and writing node:

```
benjamin@SVE1713C5E:~/catkin_ws$ cd src/
benjamin@SVE1713C5E:~/catkin_ws/src$ catkin create pkg asgn1 rospy std_msgs
Creating package "asgn1" in "/home/benjamin/catkin_ws/src"...
Created file asgn1/CMakeLists.txt
Created file asgn1/package.xml
Successfully created package files in /home/benjamin/catkin_ws/src/asgn1.
Creating package "rospy" in "/home/benjamin/catkin_ws/src"...
Created file rospy/CMakeLists.txt
Created file rospy/package.xml
Successfully created package files in /home/benjamin/catkin_ws/src/rospy.
Creating package "std_msgs" in "/home/benjamin/catkin_ws/src"...
Created file std_msgs/CMakeLists.txt
Created file std_msgs/package.xml
Successfully created package files in /home/benjamin/catkin_ws/src/std_msgs.
benjamin@SVE1713C5E:~/catkin_ws/src$ ls
asgn1  rospy  std_msgs
benjamin@SVE1713C5E:~/catkin_ws/src$ cd asgn1/
benjamin@SVE1713C5E:~/catkin_ws/src/asgn1$ ls
CMakeLists.txt  package.xml
benjamin@SVE1713C5E:~/catkin_ws/src/asgn1$ mkdir src
benjamin@SVE1713C5E:~/catkin_ws/src/asgn1$ cd src/
benjamin@SVE1713C5E:~/catkin_ws/src/asgn1/src$ touch publisher_subscriber.py
benjamin@SVE1713C5E:~/catkin_ws/src/asgn1/src$ chmod +x publisher_subscriber.py
benjamin@SVE1713C5E:~/catkin_ws/src/asgn1/src$ rostopic type /yaw
unknown topic type [/yaw]
benjamin@SVE1713C5E:~/catkin_ws/src/asgn1/src$ cd ~/catkin_ws/
benjamin@SVE1713C5E:~/catkin_ws$ catkin build asgn1
-----
Profile:                                default
Extending:                             [env] /opt/ros/melodic
Workspace:                             /home/benjamin/catkin_ws
-----
Source Space:                          [exists] /home/benjamin/catkin_ws/src
Log Space:                             [exists] /home/benjamin/catkin_ws/logs
Build Space:                           [exists] /home/benjamin/catkin_ws/build
Devel Space:                           [exists] /home/benjamin/catkin_ws/devel
Install Space:                         [unused] /home/benjamin/catkin_ws/install
DESTDIR:                               [unused] None
-----
Devel Space Layout:                    linked
Install Space Layout:                  None
-----
Additional CMake Args:                  None
Additional Make Args:                   None
Additional catkin Make Args:            None
Internal Make Job Server:               True
Cache Job Environments:                 False
-----
Whitelisted Packages:                   None
Blacklisted Packages:                   None
-----
Workspace configuration appears valid.
```

Node source code:

```
#!/usr/bin/env python

import rospy
from std_msgs.msg import Float32
from std_msgs.msg import String

def callback(data):
    pub = rospy.Publisher('/assignment1_publisher_subscriber', String, queue_size=10)
    pub.publish(str(data.data))
    #print(data.data)

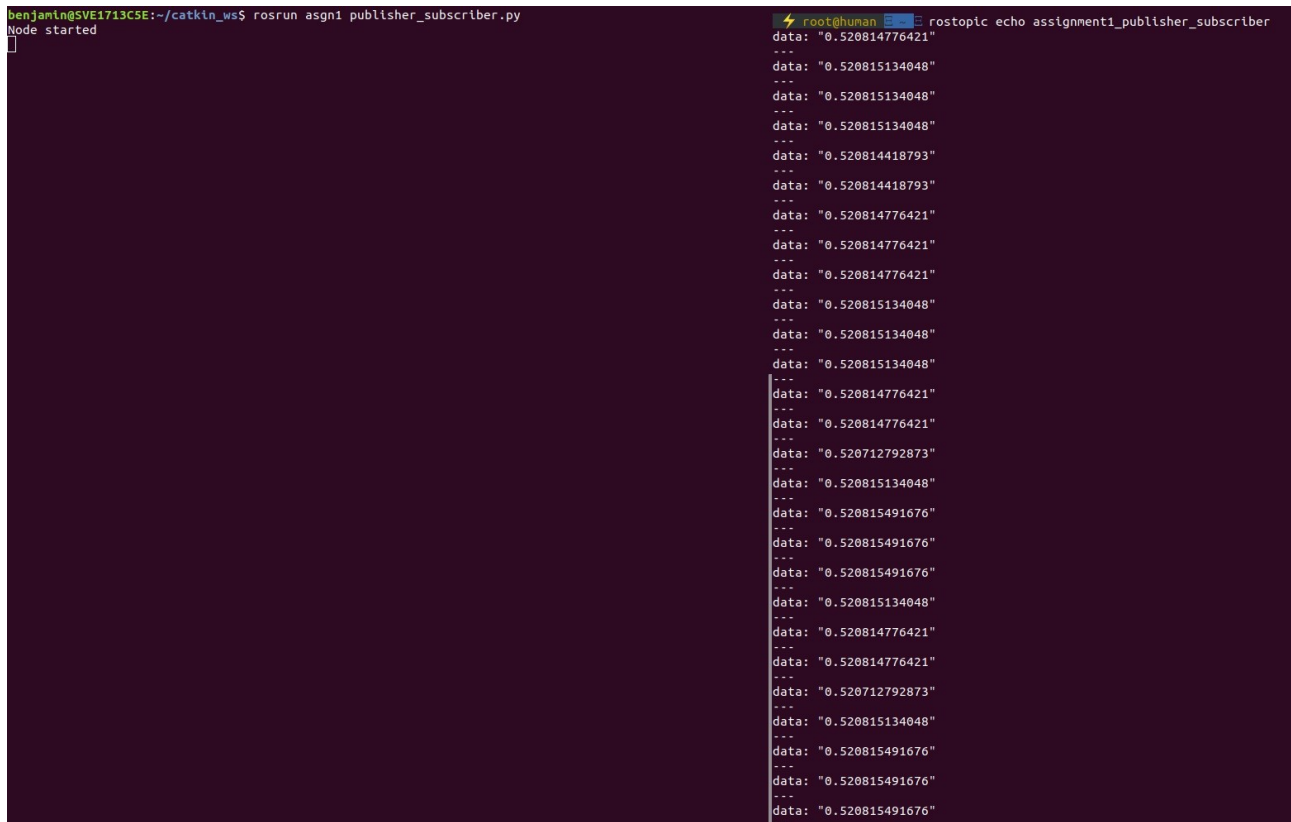
def publisher_subscriber():
    print("Node started")
    rospy.init_node('publisher_subscriber', anonymous=True)

    rospy.Subscriber("/yaw", Float32, callback)

    rospy.spin()

if __name__ == '__main__':
    publisher_subscriber()
```

Running Node on local machine and getting output on Car-SSH Terminal:



The image displays two terminal windows side-by-side. The left terminal, titled 'benjamin@SVE1713C5E:~/catkin\_ws\$', shows the command 'roslaunch asgn1 publisher\_subscriber.py' being executed, followed by the output 'Node started'. The right terminal, titled 'root@human:~\$', shows the command 'rostopic echo assignment1\_publisher\_subscriber' being executed, followed by a series of data values being received and printed, such as 'data: "0.520814776421"', 'data: "0.520815134048"', and 'data: "0.520712792873"'.

Rotating Car and getting respectively changing values on output-SSH Terminal:

```
benjamin@5VE1713C5E:~/catkin_ws$ roslaunch asgini publisher_subscriber.py  
Node started
```

```
data: "1.18884265423"  
---  
data: "1.18986320496"  
---  
data: "1.19067013264"  
---  
data: "1.19166755676"  
---  
data: "1.19250011444"  
---  
data: "1.1934325695"  
---  
data: "1.19421505928"  
---  
data: "1.19501960278"  
---  
data: "1.19598853588"  
---  
data: "1.19700670242"  
---  
data: "1.19800829887"  
---  
data: "1.19921147823"  
---  
data: "1.2006162405"  
---  
data: "1.202023983"  
---  
data: "1.20363295078"  
---  
data: "1.20510816574"  
---  
data: "1.20694005489"  
---  
data: "1.20862865448"  
---  
data: "1.21029293537"  
---  
data: "1.21173095703"  
---  
data: "1.21318280697"  
---  
data: "1.21461045742"  
---  
data: "1.21606075764"  
---  
data: "1.21757292747"  
---  
data: "1.21907639503"  
---  
data: "1.22084236145"  
---  
data: "1.22271513939"  
---  
---
```