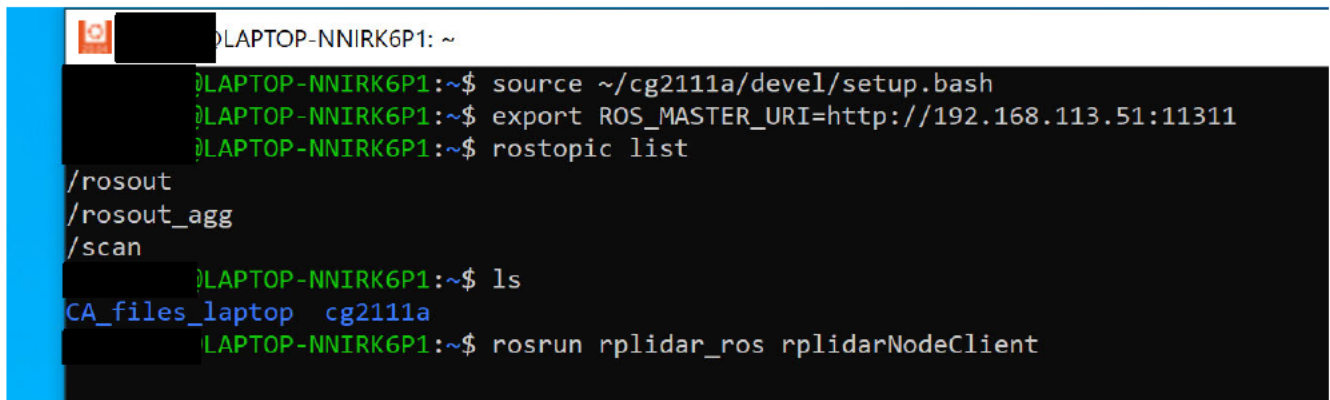Dear ▮▮▮▮,

Thank you for reaching out with your concerns regarding Tutorial 4 on ROS networking. For clarity and to ensure we're on the same page, here's a recap of your query:

[Begin of your Question]

I am at part 3.1 of tut 4. When running the command "rosrun rplidar_ros rplidarNodeClient" on my laptop's Ubuntu, there is no code execution and the screen remains empty and blank. I am pretty sure that I have fully and correctly done part 2 on my RPi and made the workplace on my laptop for part 3.1. Any help with this issue would be appreciated thank you.



```
▮LAPTOP-NNIRK6P1: ~
       ▮LAPTOP-NNIRK6P1:~$ source ~/cg2111a/devel/setup.bash
       ▮LAPTOP-NNIRK6P1:~$ export ROS_MASTER_URI=http://192.168.113.51:11311
       ▮LAPTOP-NNIRK6P1:~$ rostopic list
/rosout
/rosout_agg
/scan
       ▮LAPTOP-NNIRK6P1:~$ ls
CA_files_laptop   cg2111a
       ▮LAPTOP-NNIRK6P1:~$ rosrun rplidar_ros rplidarNodeClient
```

[End of your Question]

It's great to hear that you've successfully completed Part 2 and are using the correct Ubuntu version now! Your screenshot confirms the use of the appropriate IP address (192.168.113.51) for your Raspberry Pi (RPi). Well done on this front.

I noticed from your screenshot that you're running ROS within your Windows Subsystem for Linux (WSL) environment. While WSL is a powerful tool, it operates under Windows' security policies and permission controls, which might introduce unique challenges, especially concerning network communications and device permissions.

Given that you've successfully received **/scan** topics from your RPi on your WSL setup, it indicates that there is some level of successful communication between your ROS topics on the RPi and your ROS setup in WSL. This is a positive sign, as I've tested a similar configuration on my machine with success. Here's a screenshot of my setup for your reference.
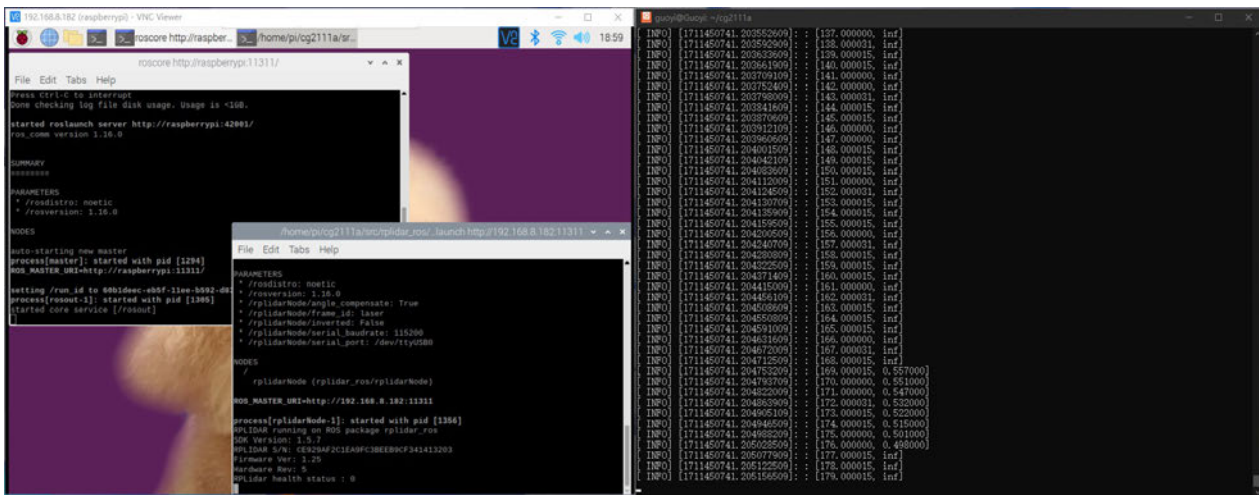
To further troubleshoot and narrow down the potential causes of the issue you're experiencing, I recommend the following steps:

1. Verify LiDAR Data on the RPi: Please ensure that the RPi can correctly receive and process LiDAR data on its own. Completing Tutorial 3 without any errors is crucial here. If Tutorial 3 runs smoothly, we can more confidently attribute the issue to network problems or system security rules rather than a hardware or software fault on the RPi itself.

2. Network Connection: If you're currently using an iPhone hotspot for your network connection, consider switching to a Windows hotspot. Different hotspots can have varied security and connectivity behaviors that might impact your setup.

3. System Reboot: A simple but sometimes overlooked step is to reboot both your RPi and Windows systems. Rebooting can resolve a range of temporary network and permission issues that might be causing communication problems.

4. Please try: rostopic echo /scan, if you can see any feedback!

Please reply if you have tried these steps and succeeded or are still struggling with this issue. By the way, tutorial 4 is optional for you, even optional for the final run from this semester! Our new image, "PurplePet," has optimized the RVIZ's performance in rendering the SLAM map on RPi itself!

Hope my solution will help you!

Best regards,
Guoyi, Teaching Assistant