

Diseño de un sistema hardware in the loop para un robot manipulador serial RR

Examen 3

Integrantes:

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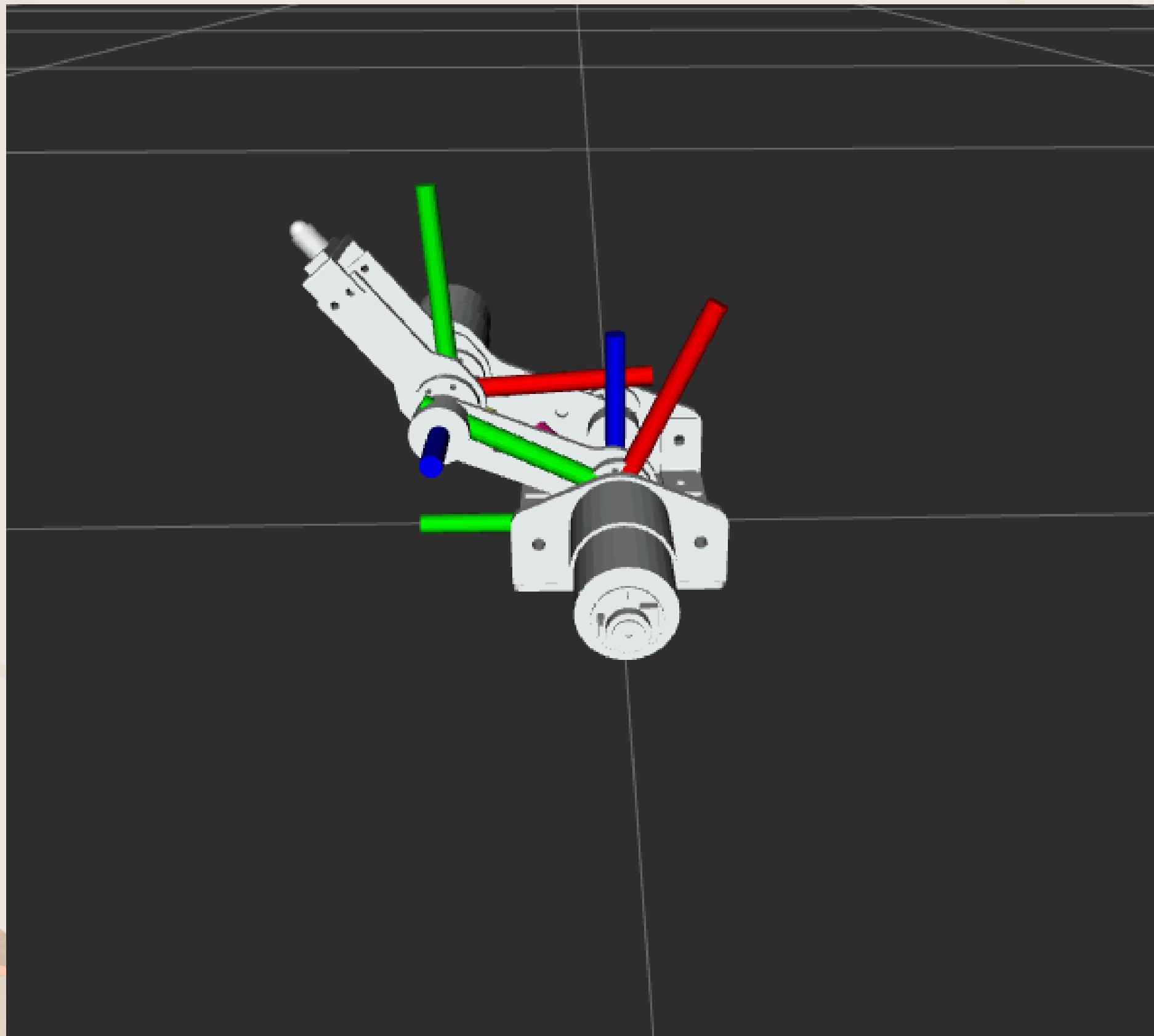
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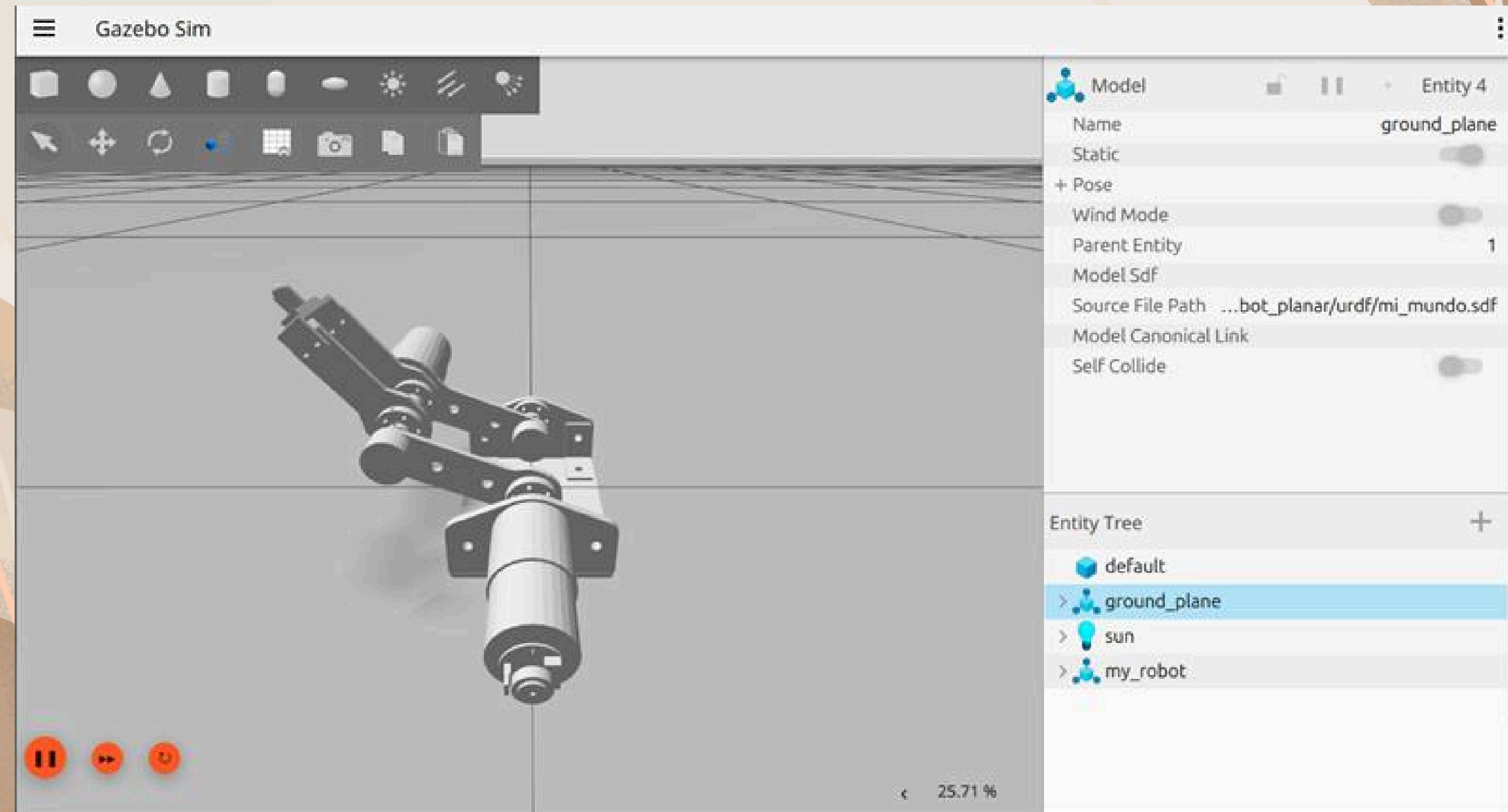
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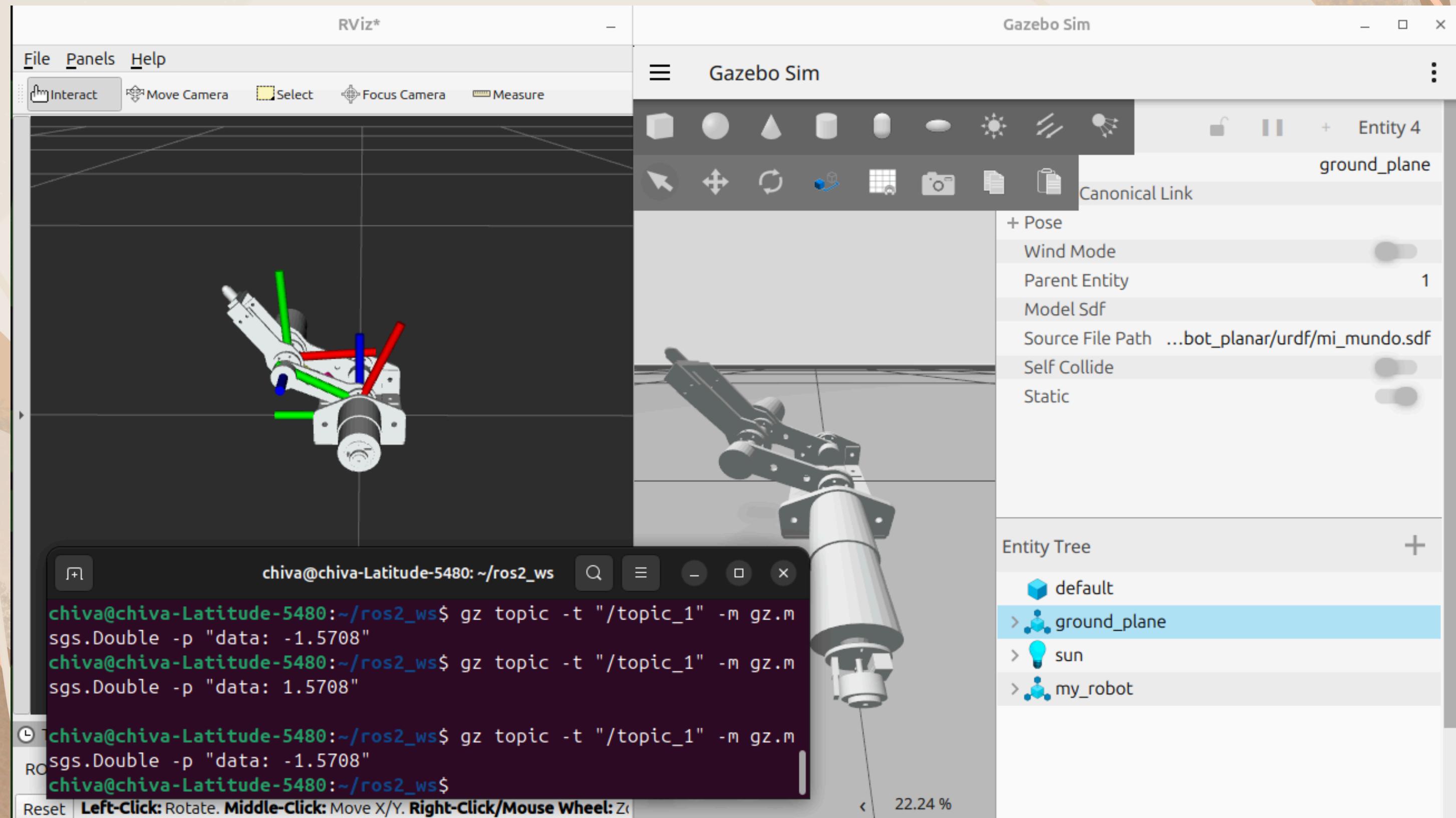
Visualización del modelo en Rviz



Visualizacion del modelo en Gazebo



NODO GZ ROS



POSICION DEL END EFECTOR

Matriz de transformación homogénea:

$$\begin{bmatrix} 0 & -1.0000 & 0 & 0 \\ 0 & 0 & -1.0000 & -7.9700 \\ 1.0000 & 0 & 0 & 8.2900 \\ 0 & 0 & 0 & 1.0000 \end{bmatrix}$$

Posición del extremo del robot (x, y): (-7.97, 8.29)

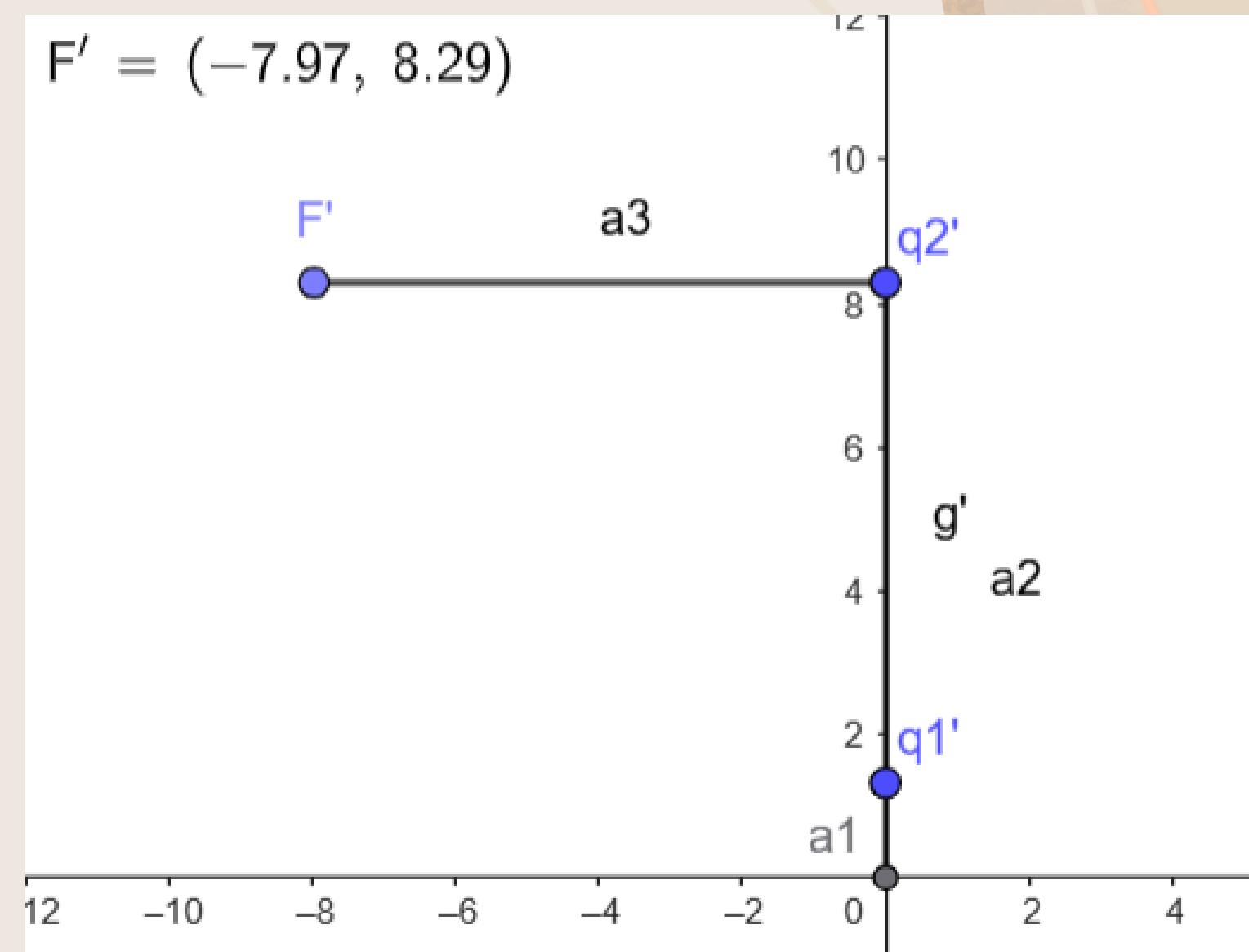
q2 =

90.0000

q1 =

90.0000

$$F' = (-7.97, 8.29)$$



MICRO_ROS



```
chiva@chiva-Latitude-5480:~/Arduino      chiva@chiva-Latitude-5480:~/uros_ws
Skipped storing sketch as workspace root. Already visited:  
er_id: 0x002(6), subscriber_id: 0x002(4)
</home/chiva/Arduino/led>.               ^C[ros2run]: Interrupt
Stored workspaces roots: /home/chiva/Arduino/led  
chiva@chiva-Latitude-5480:~/uros_ws$ ros2 run micro_ros_agent micro_
No sketches were scheduled for deletion.    ros_agent serial --dev /dev/ttyUSB0
chiva@chiva-Latitude-5480:~/Arduino$ ./arduino-ide_2.3.6_Li
[1747019650.512722] info    | TermiosAgentLinux.cpp | init
nux_64bit.AppImage --no-sandbox          | running...           | fd: 10
Arduino IDE 2.3.6                        ^C[ros2run]: Interrupt
Checking for frontend application configu
[1747019650.513641] info    | Root.cpp       | set_verbose_leve
rations. Module path: /tmp/.mount_arduin
l | logger setup           | verbose_level: 4
o90404J/resources/app/lib/backend/electro
n-main.js, destination 'package.json': /tm
p/.mount_arduin90404J/resources/app/package.json
Setting 'theia.frontend.config.appVersion' application conf
[1747019776.130425] info    | TermiosAgentLinux.cpp | init
iguration value to: "2.3.6" (type of string) | running...           | fd: 10
Setting 'theia.frontend.config.cliVersion' application conf
[1747019776.131040] info    | Root.cpp       | set_verbose_leve
iguration value to: "1.2.0" (type of string) | logger setup           | verbose_level: 4
chiva@chiva-Latitude-5480:~              chiva@chiva-Latitude-5480:~
data: 8979                                publishing #1: geometry_msgs.msg.Point(x=-0.1391, y=16.2588, z=0.0)
---  
^Cchiva@chiva-Latitude-5480:~$ ros2 topic echo /joint_state  chiva@chiva-Latitude-5480:~$ ros2 topic pub /position_command geometry
x: 89.0                                     msgs/msg/Point "{x: -7.97, y: 8.29, z: 0.0}" -1
y: 90.0                                     publisher: beginning loop
z: 0.0                                      publishing #1: geometry_msgs.msg.Point(x=-7.97, y=8.29, z=0.0)
---  
^Cchiva@chiva-Latitude-5480:~$ ros2 topic echo /joint_state  chiva@chiva-Latitude-5480:~$ ros2 topic pub /position_command geometry
x: 90.0                                     msgs/msg/Point "{x: -0.1391, y: 16.2588, z: 0.0}" -1
y: 0.0                                      publisher: beginning loop
z: 0.0                                      publishing #1: geometry_msgs.msg.Point(x=-0.1391, y=16.2588, z=0.0)
---  
^Cchiva@chiva-Latitude-5480:~$ ros2 topic echo /joint_state
data: 9000
```



GRACIAS