ROS 2 Documentation

# Ros Package and Node Create

mkdir –p myWorkspace/src

cd src

ros2 pkg create --build-type ament\_python myPackage --dependencies rclpy std\_msgs --node-name myNode

# For Cloning Neuronbot

<https://github.com/Adlink-ROS/neuronbot2>

Execute steps 2, 3, 4 and 6 from the terminal.

Go to src/neuronbot2/neuronbot\_gazebo directory. Then, open the spawn\_nb2.launch file and change the 3 timeout values from ‘300’ to ‘5’ (otherwise you may have to wait 300 seconds for the laser to start up after spawning the robot)

ros2 launch neuronbot2\_gazebo neuronbot2\_world.launch.py world\_model:=mememan\_world.model

If the robot does not spawn, go to the Insert tab on the left side. You will see 3 neuronbot models. Although they have the same name, they are actually different models: 1. NeuronBot with laser scanner 2. NeuronBot with laser scanner and camera on the front 3. NeuronBot with laser scanner and camera on the top

Go to src/neuronbot2/neuronbot2\_gazebo/models/ neuronbot2\_w\_front\_camera directory. Open the models.sdf file and find the tag. Underneath it, you will find the , and tags. Edit their values to 36 samples, -0.7 min\_angle and 0.7 max\_angle. Save the file and rerun the simulation with the NeuronBot model (front camera version). Now the robot will have the modified laser.

# For Teleoperation

ros2 run teleop\_twist\_keyboard teleop\_twist\_keyboard

ros2 run turtlesim turtlesim\_node

ros2 run turtlesim turtle\_teleop\_key

# For Setting the linear and angular velocities

ros2 topic pub --once turtle1/cmd\_vel geometry\_msgs/msg/Twist "linear: x: 0.0 y: 0.0 z: 0.0 angular: x: 0.0 y: 0.0 z: 0.0"

# Dummy Code

### TURN CODE STARTS HERE ### import rclpy from rclpy.node import Node from std\_msgs.msg import Int32 from geometry\_msgs.msg import Twist class VelocityPublisher(Node): def \_\_init\_\_(self): super().\_\_init\_\_('turn') self.publisher\_=self.create\_publisher(Twist, 'cmd\_vel', 10) timer\_period = 0.5 self.timer= self.create\_timer(timer\_period, self.timer\_callback) def timer\_callback(self): msg = Twist() msg.angular.z =1.0 self.publisher\_.publish(msg) def main (args=None): rclpy.init(args=args) vel\_publish = VelocityPublisher() rclpy.spin(vel\_publish) vel\_publish.destroy\_node() rclpy.shutdown() EE-381 – Robotics if \_\_name\_\_== '\_\_main\_\_': main()

cp -r /home/user/deepsoccer\_gazebo/ /home/user/.gazebo/models

/usr/share/gazebo-11/models

sudo cp -r /home/user/deepsoccer\_gazebo/Soccer/models/football /usr/share/gazebo-11/models

cd neuronbot2\_ws/Soccer

colcon build

. install/setup.bash

sudo cp -a /home/user/deepsoccer\_gazebo/models/. /usr/share/gazebo-11/models/

just change the world file a bit

then first launch the football world then the neuronbot world and then the ball tracker node