

# ROS Workshop - Tutorial 5 - Turtlebot3 Simulator

ME 4140 - Introduction to Robotics - Fall 2020

## Original TurtleBot

(Discontinued)



## TurtleBot 2 Family



TurtleBot 2



TurtleBot 2i



TurtleBot 2e



TurtleBot Euclid

## TurtleBot 3 Family

Burger



Waffle



Waffle Pi



1. Update your linux system before you get started.

```
sudo apt-get update
```

2. Install the necessary nodes into your ROS system. This tutorial comes from [here](#).

**turtlebot3**

```
sudo apt-get install ros-melodic-turtlebot3
```

**turtlebot3\_simulations**

```
sudo apt-get install ros-melodic-turtlebot3-simulations
```

**turtlebot3\_gazebo**

```
sudo apt-get install ros-melodic-turtlebot3-gazebo
```

3. Test the simulator. First set the environment variable `TURTLEBOT_MODEL`. Add this line to the `.bashrc` script so you do not have to do it for each terminal.

```
export TURTLEBOT3_MODEL=burger
```

Then turn on the simulator.

```
roslaunch turtlebot3_gazebo turtlebot3_world.launch
```

You should see the gazebo window open containing your robot. Test that the keyboard drives the robot. This may take some time.

```
roslaunch turtlebot3_teleop turtlebot3_teleop_key.launch
```

4. Now turn on the node to produce robot data in the simulated world.

```
roslaunch turtlebot3_gazebo turtlebot3_simulation.launch
```

Open RVIZ to view the data. This is a very useful tool.

```
roslaunch turtlebot3_gazebo turtlebot3_gazebo_rviz.launch
```

5. Next we are going to learn about SLAM and GMAPPING ! Please see the tutorial referenced above if you are ready to proceed.