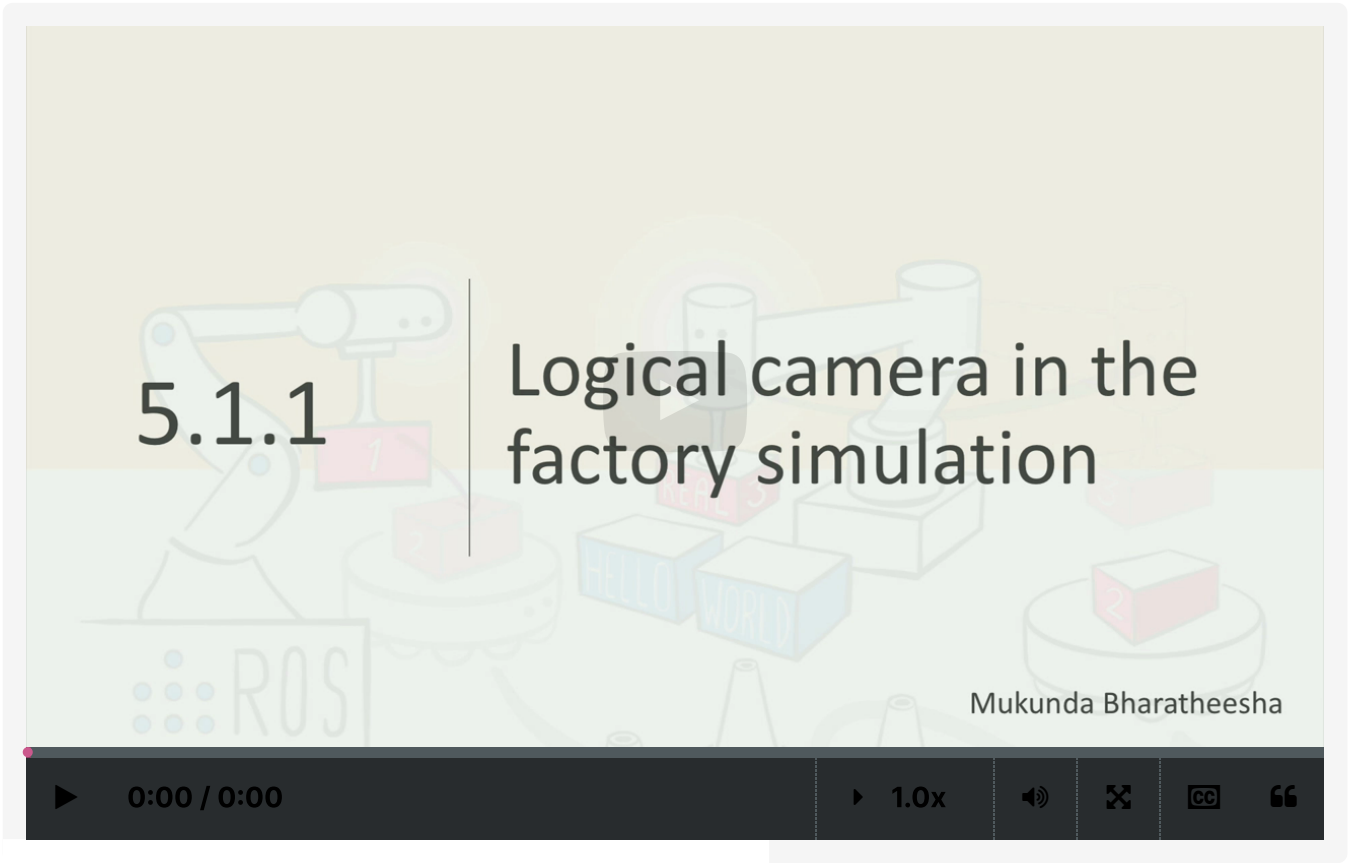
In this lecture, we will learn how to add a logical camera to our factory simulation. Furthermore, a few basics of Gazebo world files will be explained.

Logical camera



Video ▼ Subtitles ▼

Other ▼

Basic Concepts of a Gazebo world file:

- A world file is used to create simulation models for the Gazebo physics simulator.
    - The models are defined using the simulation description format (.sdf)

- Multiple .sdf models composed a world file.
- .sdf files are similar to URDF (introduced in week 2) But they have more features, such as friction or non-robotic elements.
- URDF models are spawn into Gazebo using an spawner ROS node.

- Functionality if the models can be configured using plugins.
  - We have created a logical camera plugin for this course.

Where to find the models

- For this course, the models can be found in the `models` folder of the `hrwros_gazebo` ROS package
  - `hrwros_gazebo/models`
  - The camera model file can be found in:
    - `hrwros_gazebo/models/logical_camera/model.sdf`
  - What objects can be detected by the logical camera:
    - `hrwros_gazebo/config/conveyor_objects.yaml`
    - `simple box object`

We can include .sdf models to our world with the `include` tag.

The world file shown in the video is an example on how to add models to the world.
It is not the actual world file on your `hrwros_gazebo/worlds` folder.

```
<sdf version="1.5">
  <world name="hrwros_world">

    <include>
      <uri>model://conveyor</uri>
      <pose>1.2 5 0 0 0 -1.571</pose>
```

```
    </include>
    <!-- include logical camera model(s) here -->

  </world>
</sdf>
```

Question 1

1 point possible (ungraded)

Simulation Description Format (sdf) and URDF format models cannot be used together. That is the reason we have an RViz and Gazebo simulation set up for the factory environment.

- ◯ True
- ◯ False

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Question 2

1 point possible (ungraded)

Which of the following is true

- ☐ The Gazebo sdf models are added in the python scripts for week5 with the import methods, so that they show up in the Gazebo simulation.
- ☐ The Gazebo sdf models are added in the .world files to make sure they appear in the Gazebo simulation.

- [ ] The Gazebo sdf models can be anywhere on our computer. As long as the path to those files are on our ROS package path, the models will show up in Gazebo and we don't need to add them to the world file.

- [ ] Gaebo sdf models can be specified with both position and orientation (with roll-pitch-yaw parameters) in the .world file.

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