Robot Assembly Exporting

Estimated time to completion: **7 minutes**

8.6 Step 4: Preconfig

Let's follow some required preconfiguration steps before exporting the model:

- Create a new package for this robot named `quadruped_description` .
- Create a `folder` named `quadruped` to house all the files needed for this export.
- In this folder, `quadruped` , export URDF and its 3D meshes.

▶ **Execute in WebShell 1**

```
In [ ]:   cd ~/ros2_ws/src
          ros2 pkg create --build-type ament_cmake quadruped_description --dependencies urdf xacro
          cd quadruped_description
          mkdir quadruped
          touch quadruped/config.json

          mkdir launch
          mkdir rviz
```

- Modify the `CMakelists.txt` to install the folders `quadruped` , `launch` , and `rviz` :

CMakeLists.txt

In [ ]:
```
cmake_minimum_required(VERSION 3.8)
project(quadruped_description)

if(CMAKE_COMPILER_IS_GNUCXX OR CMAKE_CXX_COMPILER_ID MATCHES "Clang")
  add_compile_options(-Wall -Wextra -Wpedantic)
endif()

# find dependencies
find_package(ament_cmake REQUIRED)
find_package(urdf REQUIRED)
find_package(xacro REQUIRED)

if(BUILD_TESTING)
  find_package(ament_lint_auto REQUIRED)
  ament_lint_auto_find_test_dependencies()
endif()

install(
  DIRECTORY
    rviz
    launch
        quadruped
  DESTINATION
    share/${PROJECT_NAME}/
)

ament_package()
```
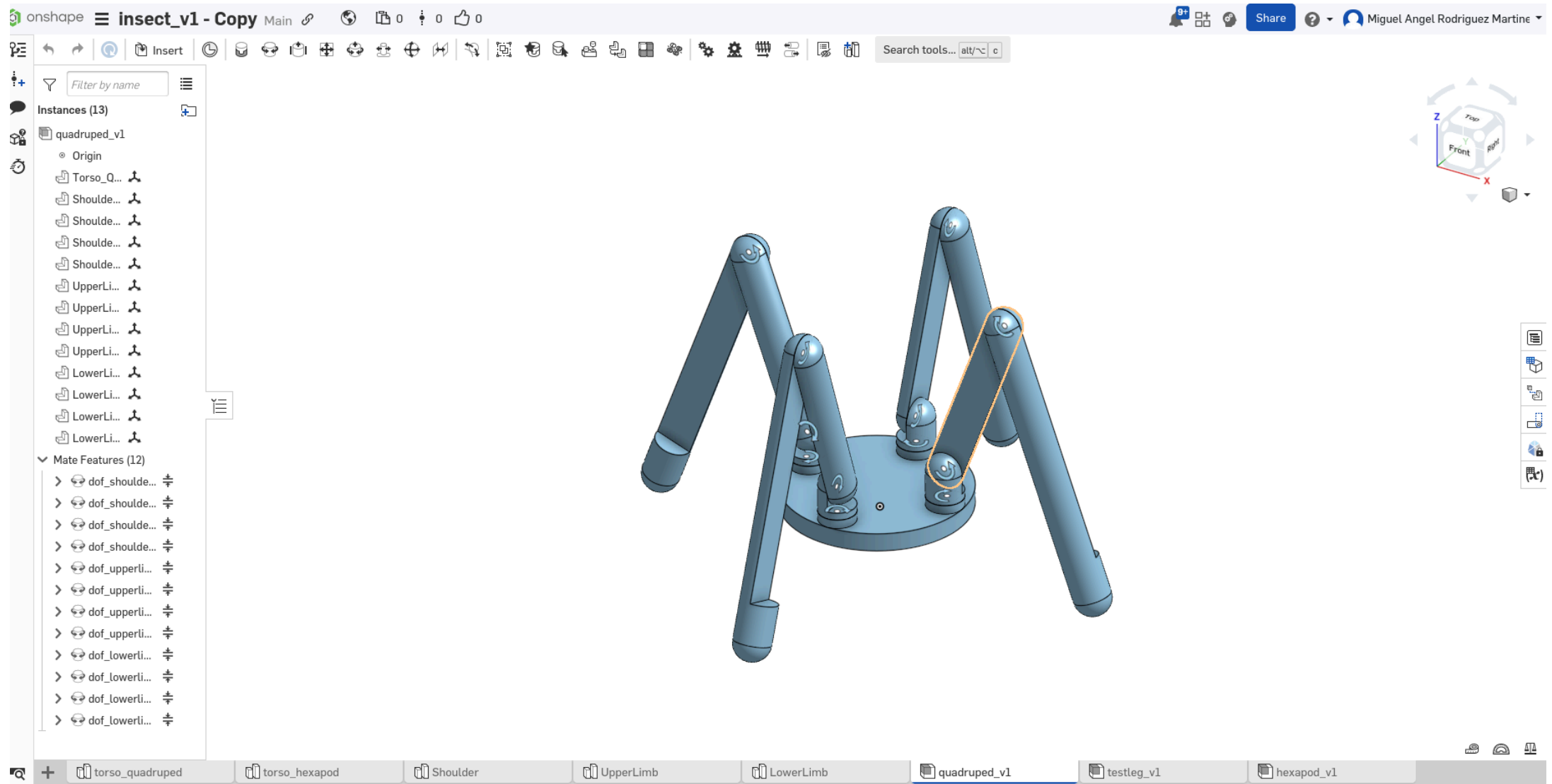
config.json

- Now, add the contents of the `config.json` file.

```
In [ ]:  {
             "documentId": "document-id",
             "outputFormat": "urdf"
         }
```

- This file is used by `Onshape-to-robot` to specify details for the export.
- For now, make it as simple as it possibly can be.
- Extract the `document-id` .
- The `document-id` is the number associated with your Onshape robot assembly.
- For this example, we provide a model already prepared for the export.
- Here is the link: https://cad.onshape.com/documents/33b91de06ddc91b068fcf725/w/3e9cd5a83630cb75d064813a/e/8e6a230fa3aabb1441b0aa17

- If you want to edit or change this assembly, you will need to click on `MAKE a copy to edit` when you open it:

- Because the assembly link provided allows you to export, you only need the `document-id`.
- It is found in the `URL` of the project assembly.
- It is the ID after `documents/`.

```
In [ ]:  URL = https://cad.onshape.com/documents/33b91de06ddc91b068fcf725/w/3e9cd5a83630cb75d064813a/e/8e6a230fa3aabb1441b0aa17

         document-id = 33b91de06ddc91b068fcf725
```

- Now, replace that value in the document like so:

config.json

```
In [ ]:  {
             "documentId": "33b91de06ddc91b068fcf725",
             "outputFormat": "urdf"
         }
```

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