

Drawing on a Cartesian space using Panda Robot and ROS

One ROS package named AR_week8_test is created in a catkin_ws .

2 nodes square_size_generator.py and move_panda_square.py is create and stored in the src (source) module in the package.

To run the Package:

- Extract the package
- [Optional] Install MoveIt, if not installed. Follow the following link to install
http://docs.ros.org/melodic/api/moveit_tutorials/html/doc/getting_started/getting_started.html
- Now download 2 repositories, which will allow rViz with Panda robot model
- From the catkin workspace:
`git clone -b melodic-devel https://github.com/ros-planning/moveit_tutorials.git`
`git clone -b melodic-devel https://github.com/ros-planning/panda_moveit_config.`
- Build Catkin workspace and source it
`catkin build`
`source ~/ws_moveit/devel/setup.bash`
- Once the workspace is ready, make the nodes executable, by running the following 'scripts' folder consisting of all nodes.
`chmod +x square_size_generator.py`
`chmod +x move_panda_square.py`
- Now, open a terminal and get roscore running:
`roscore`
- Open another terminal, and launch Rviz by running:
`roslaunch panda_moveit_config demo.launch`

- In another terminal run the following:
`roslaunch AR_week8_test square_size_generator.py`

Initiates the first node, which generates random square size and publish to 'size' topic

- In another terminal run the following:
`roslaunch AR_week8_test move_panda_square.py`

This will initiate the second node(main), which subscribes to 'size' topic and communicate with panda robot arm. MoveIt to 'draw'.

- To visualise the joints positions, run:(add all joint state positions in the GUI)
- Plot rqt_plot, run the following
`roslaunch rqt_plot rqt_plot`