

Practical Robotics

Exercise 1

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1 Code Setup

Install and test

<https://github.com/MarcToussaint/robotics-course>

Follow the instructions towards the bottom of the README (“Practical Course information”)

The specific goals are

1. to compile the repository
2. to connect to ROS and see the ros messages
3. to run your first application that moves baxter, either in ‘cpp/p1-’ or ‘py/p1-’

2 Basic motion

Revive what you’ve learned in the robotics course about computing poses and generating motion. In particular, think already about grasping. What would be a way to make the robot grasp a sphere, cylinder, box, or general shape?

Specific goals to get started:

1. The examples in ‘cpp/p1-’ and ‘py/p1-’ add a virtual object to the scene. Move the left arm towards that object.
2. Think about how to align the gripper, open close the gripper, sequence motion, etc.

3 Git Setup

Your group should have your own git repo to collaborate. I recommend to create your own repo on github, and place it next to the robotics-course repo in ‘\$HOME/git’ There are two alternatives:

- Your repo only contains your own py or cpp code, with Makefiles pointing to the robotics-course repo.
- Your repo complete mimick of robotics-course, having the same submodules, but only your own work directories. This is more self-contained, but requires you to understand submodules.

Specific goals to get started:

1. Read the git tutorial <https://try.github.io/>
2. Create your own group git repo somewhere
3. Know how to create different branches, e.g. for parallel development of different group members
4. Each group member should have made at least one commit, e.g. with a trivial hello text file