KINOVA

SOLUTION

Introduction to Gen3 lite

Last update: 2021-04-21

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Manipulations

Part 1: Using the Kortex Web App

1.1

Use the virtual joysticks and treat translation and rotation independently.

1.2

There are 8 possible configurations. Shoulder to the left/right, Elbow up/down, Wrist using a positive or negative angle. These solutions will be discussed again in the lab on Inverse Kinematics.

1.3

The zero position can be reached either using the angular joystick or the pre-programmed Zero-position action. Then, the cartesian information can be read either in the monitoring page or in the cartesian pose virtual joystick menu.

Part 2: Using the MATLAB API wrapper

2.1

Sending commands to the robot is a lot more accurate than manually operating it using the virtual joysticks.

2.2

```
gen3_lite = ...
    struct('IP_ADDRESS','192.168.1.10','ID','admin','PASSWORD','admin', ...
    'SESSION_TIMEOUT',uint32(60000),'CONTROL_TIMEOUT',uint32(2000));
[~, gen3_lite_handle, ~] = kortexApiMexInterface('CreateRobotApisWrapper', ...
    gen3_lite.IP_ADDRESS, gen3_lite.ID, gen3_lite.PASSWORD, ...
    gen3_lite.SESSION_TIMEOUT, gen3_lite.CONTROL_TIMEOUT);
[~,BaseFeedback,~,~] = ...
    kortexApiMexInterface('RefreshFeedback',gen3_lite_handle);
tool_pose_cart=BaseFeedback.tool_pose
[~] = kortexApiMexInterface('DestroyRobotApisWrapper', gen3_lite_handle);
```

2.3

Singularities are described in the User Guide on pages 124-125.

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