KUKA SUNRISE TOOLBOX (KST)

CONTROL IIWA • FROM MATLAB

Open source:
KST is an open source project. It is a MATLAB toolbox for controlling KUKA iiwa robots from external PC. The toolbox is available in github, and is provided under MIT license:
https://github.com/Modi1987/KST-Kuka-Sunrise-Toolbox

Easy to use:
Control iiwa using familiar scripting language of MATLAB.

Includes various tutorial examples:
Includes scripts for controlling iiwa using 3d space mouse, joystick, cad files and more. See next page.

Easy integration of external sensors:
Easy to integrate sensors and external controls.

Supported with video tutorials on YouTube:
Freely accessible, links are available in the repo webpage.

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Email: ms@uc.pt

Example: objects recognition and grasping from MATLAB. KUKA iiwa controlled using KST.

Freely available under MIT license at github, visit the repo webpage from your smartphone.

URL in QR code

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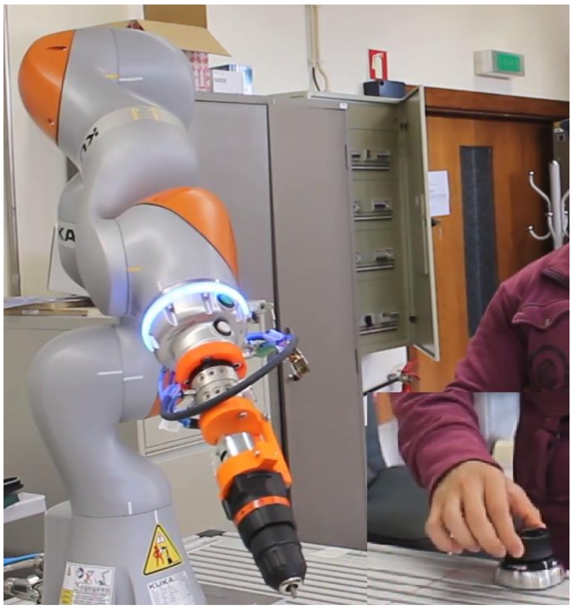
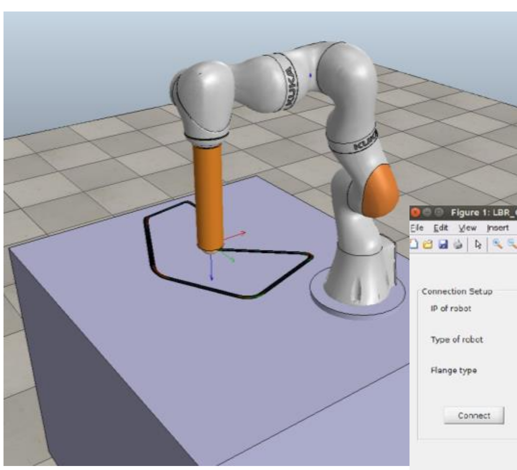


Included example: control iiwa on-the-fly using 3D space mouse

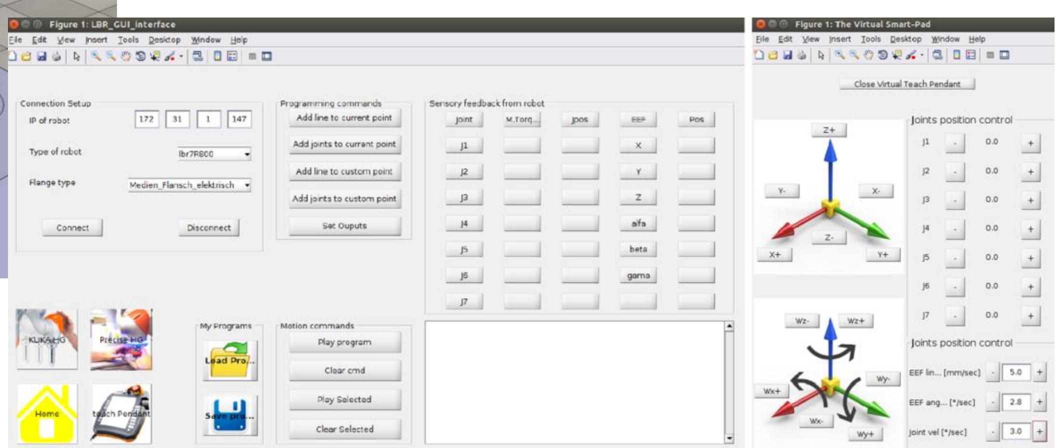
Algorithm 1: Drawing a rectangle (MATLAB code)

```
% Connect to a robot with IP 172.31.1.147
[tKuka,flag]=connectToKuka('172.31.1.147')
% Define the robot initial configuration in joint space
pos={0, -pi/180*10, 0, -pi/180*100, pi/180*90, pi/180*90, 0}
% Define the override velocity of the joints motion
relVel=0.2
% Move the robot to the specified initial configuration
movePTPJointSpace(tKuka, pos, relVel)
% Define the relative position of the first rectangle
point (100 mm away in Z direction)
distPos={0,0,100}
% Define end-effector linear velocitY (mm/sec)
vel=30
% The end-effector is moved down towards the upper
side of the box in relative motion
movePTPLineEefRelEef(tKuka, distPos, vel)
% The length of the sides of the rectangle are (w1,w2)
w1=100; w2=125;
% Move the robot considering the relative position of
each node of the rectangle relative to the frame of
the end-effector
distPos={w1,0,0}
movePTPLineEefRelEef(tKuka , distPos, vel)
distPos={0,w2,0}
movePTPLineEefRelEef(tKuka , distPos, vel)
distPos={-w1,0,0}
movePTPLineEefRelEef(tKuka , distPos, vel)
distPos={0,-w2,0}
movePTPLineEefRelEef(tKuka , distPos, vel)
```

Control iiwa using the familiar scripting language of MATLAB



Included example: Integrate 3D simulators while controlling the real robot on-the-fly.



Included example: integrate GUI interfaces for controlling iiwa