

Homework 3

Introduction to Robotics

Tasks:

1. Use kinematic model of the robot [FANUC R-2000iC/165F](#)
2. Find robot Jacobian (Skew theory)
3. Find robot Jacobian (Numerical method)
4. Kinematic Singularities analysis

Requirements:

1. Matlab / Python code [1], [2]
2. Implement two functions $J(q)$ to find the robot Jacobian and compare results
3. Try to find 3 singular cases using the singular value decomposition (SVD) of matrix J .
4. Report:
 - Description of the considered robot
 - Step by step explanation of Jacobian calculation solutions
 - Joints position for singular cases
 - Link to the project on github.com

Submit only report to moodle.

[1] No allowed to use robotics libraries and toolboxes

[2] Cheat penalty: 0 for Homework.