EN4563 Robotics
Laboratory Experiments Setup

Title: Introduction to Robotics Toolbox

1. Introduction

Robotics Toolbox is developed by Prof. Peter Corke (https://petercorke.com/about/) for MATLAB environment and the toolbox contains functions and classes to represent orientation and pose in 2D and 3D (SO(2), SE(2), SO(3), SE(3)) as matrices, quaternions, twists, triple angles, and matrix exponentials. The toolbox also provides functions for manipulating and converting between datatypes such as vectors, homogeneous transformations and unit-quaternions that are necessary to represent 3-dimensional position and orientation.

This toolbox is **different** to the MathWorks's own Robotic Systems Toolbox.

2. Installation

Detailed instructions to install Robotics Toolbox for MATLAB can be found at the link: https://petercorke.com/toolboxes/robotics-toolbox/ under the heading "*Installing the toolbox*".

However, you are encouraged to download and install the toolbox from the Moodle course page, and use it together with a MATLAB version equal to or higher than R2013a.

3. Setup

When you are using the toolbox from Moodle course page follow the instructions:

- Extract the rvctools.zip file to a directory with the name "rvctools" anywhere in your computer.
- Make sure that you have three sub-directories: (robot, smtb, common) inside the "rvctools" directory.
- Start MATLAB software, and open the directory "rvctools" → "common" to run the code file named "startup_rvc.m". To run this file, you can either change the MATLAB current folder or add its folder to the MATLAB path. You will have to do this every time you need to work with the toolbox per MATLAB session.