Homogeneous Transformation for myCobot 280 M5

Jay Menon[1]
[1]School of Manufacturing Systems and Networks, Arizona State University, Arizona, USA

Article Info

Keywords:

myCobot
pymycobot library
Homogeneous Transformation

ABSTRACT

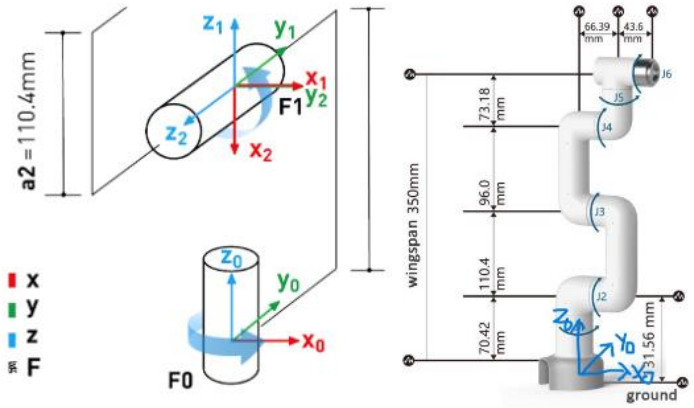
This study describes a Python-based control script that communicates with a MyCobot robotic arm by using the pymycobot library. With the use of sequential joint angle commands, the experiment seeks to demonstrate the MyCobot's remote control capabilities.

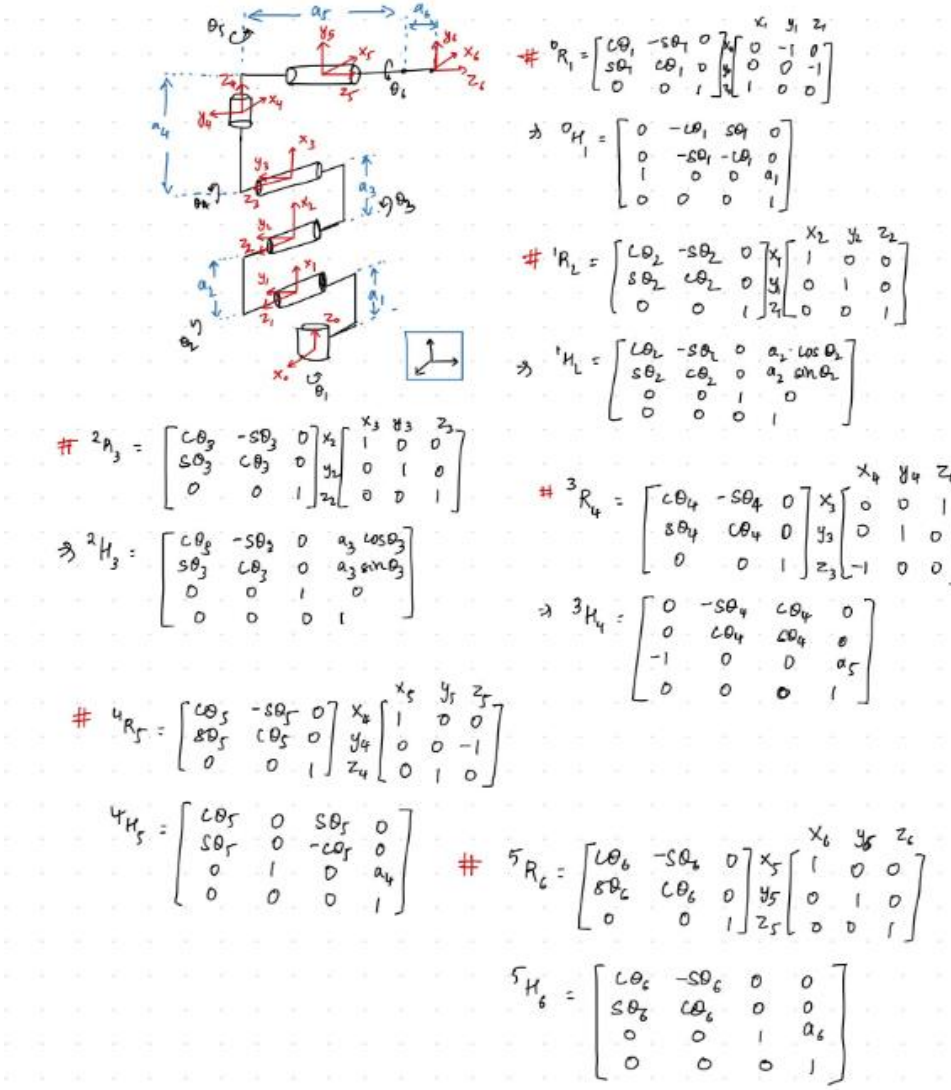
1. OBJECTIVE

The objective of the provided code is to control a myCobot robotic arm using the pymycobot library in Python.

2. METHOD

This experiment uses the Python pymycobot library to coordinate the control of a myCobot. The first step involves connecting to the MyCobot with a baud rate of 115200 and the designated communication port, "COM5". This link serves as the interface that the robotic arm uses to receive further commands. The code directs the MyCobot to move through a series of preset joint angles once it is connected. It sends a set of angles [0, 0, 0, 0, 0] in this case, and then switches to another set [0, 90, -60, 40, 0, 0]. This also includes a loop mechanism that prints the current coordinates of the MyCobot to the console after retrieving them with the get_coords() function. For the amount of time that the time specifies, this loop iterates.The sleep(5) command enables real-time tracking of the robotic arm's position. Finally, given angles and coordinates can be verified with each other.





3. CHALLENGES FACED

Calibration must always be done for the robot to teach a reference position. When you release all the joint servos, hold the robot before crashing to the ground.

4. CONCLUSION

To sum up, this experiment successfully demonstrates how to use the pymycobot library to use Python to remotely control a MyCobot robotic arm. The script is executed to establish a connection, commands the robotic arm's joint angle sequentially, and continuously tracks its real-time coordinates. Additionally, we manually compute the homogenous matrices of the cobot.

REFERENCES

[1] Cobot Labs, https://docs.google.com/document/d/1kWq4milBgbxbNO80HPnsYiMwxRQ8QIYt01OGePCYDU8/edit