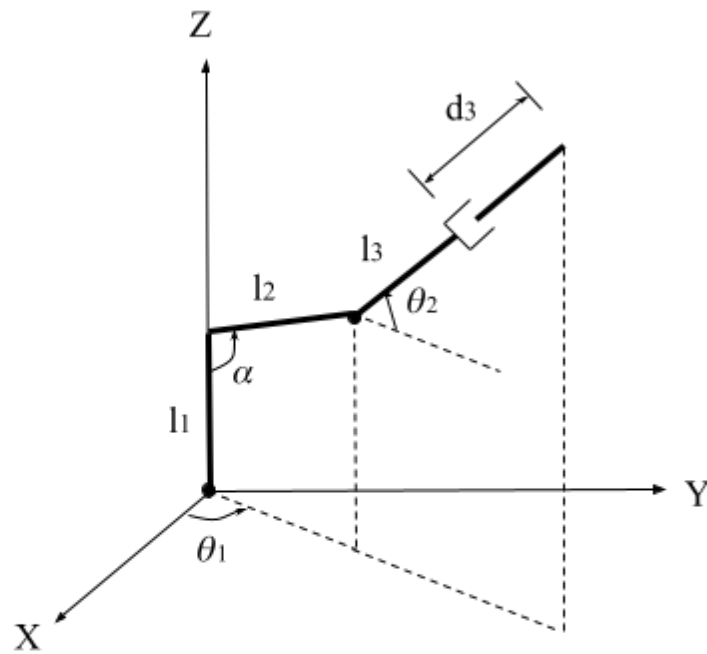


Tutorial 4 - Jacobian Computation

ID6040: Introduction to Robotics

April 2020

1. For the spatial RRP manipulator given below, calculate the linear jacobian and the angular jacobian for a general case



Spatial RRP Manipulator

2. Write a program which takes the DH parameters of any robot (you can use the DH parameters of the above robot as an example) as the input in the form of a matrix and then perform the following computations.

a. Write a function that uses the DH parameter table to obtain the homogeneous transformation matrix that relates the end effector position and orientation to the base frame (You can use the codes written in previous assignments for this).

b. Write functions to compute the linear Jacobian $A(q)$ and the angular Jacobian $B(q)$ and report the output. Compare it with the solution obtained in the previous question to check veracity of solution.