

Aim :Study components of a real robot and its DH parameters.

Parameters:

Link length,Link twist, Joint angle, Link offset

Theory:

DH parameters, or Denavit-Hartenberg parameters, are a common method used to describe the kinematics of robotic manipulators. The DH parameter method is a mathematical technique for modeling the relative position and orientation of each joint in a robot arm. There are four DH parameters that are used to describe the kinematics of each joint in a robot arm. These parameters are:

Link length: This is the distance between two consecutive joint axes along the common normal. It is denoted by the symbol "a".

Link twist: This is the angle between two consecutive joint axes about their common normal. It is denoted by the symbol " α ".

Joint angle : This is the angle between two consecutive links about their joint axis. It is denoted by the symbol " θ ".

Link offset: This is the distance between two consecutive joint axes along the common tangent. It is denoted by the symbol "d".

By defining these four parameters for each joint, it is possible to model the position and orientation of the robot's end effector. The DH parameters are typically used to define the transformation matrix between two consecutive links in a robot arm, which enables the computation of the position and orientation of the end effector based on the joint angles.

In addition to the DH parameters, other factors such as joint limits, joint velocities, and joint torques also need to be considered when designing a robotic manipulator. These factors are important for ensuring that the robot is able to perform its intended tasks safely and efficiently.

