

## **ABSTRACT**

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### **DH-MODEL COUNTING APPLICATION**

(xi + 66 pages: 34 figures; 12 tables)

DH-Model counting system is a simulating program that obtain the Denavit-Hartenberg parameters to get the robot's full transformation matrix. The way to get the DH parameters is first to declare the frame reference and also the basic reference from the base. Before we get the DH parameters from the frame reference, we must understanding the translation from first joint to the next joint.

The program is built using Microsoft Visual Basic 6.0 software, the matrix calculation and the 3 dimension drawing using the Matlab 7.0. It can be used to design a robot with maximum 5 joints and 6 links. However, it still needs the input from user about the link's length, the first joint, the second joint and so on. The input's data is used by the program to calculate the DH parameters, and then it can also calculate the DH matrix for each joint. After getting the DH matrix for each joint, the program can also calculate the total transformation matrix for the full system of the robot, and we can get the coordinates of each links and the end effector. After we get the coordinates, the system will use matlab to draw robot in 3 dimension.

This program has achieved the goal of this final assignment successfully to help user to count the DH parameters, DH matrix and also the coordinates of each links and end effector and the 3 dimension drawing of the robot. Further studies may include the inverse matrix, creating the picture of the robot.

References: 8 (1995-2009)