

AE 352 Project (Homework 9-10)

EVALUATION OF ROBOTIC ARM SIMULATION

A 3-D Printed Model

PROPOSAL

by

Steven Macenski, Chris Lorenz

We propose to create a hardware robotic arm as explored in homework 6. This arm will feature a slightly different configuration with the rotational base being larger for simplicity of manufacturability.

We want to explore this to test the dynamical model produced in homework 6 and validate or talk about issues in the assumptions in it. We will try to match the friction in the simulation joints to the hardware created, as this is much simpler than to try to create an extremely low friction joint at a reasonable cost.

Moreover, we want to work on this project to get more experience working with hardware and simulations that we have created to identify possible issues in the future.

Evaluation of success will be based upon the accurate representation of the robot arm created with the simulation. An alternative success criterion will be to identify points of inaccuracy in the model to the hardware and a discussion of how to fix it or if it is inherently flawed.

Efforts will be made to create the model as true to the simulation as possible, then for parts unable to represent, the simulation will be modified to fall in line. Examples of modifications include: changes in moment of inertia matrix, changes in mass properties, and changes in size.