

Arun Kumar  
ME 449  
Final Project

### **Controller Type**

Feedforward-Plus-PI controller

### **Controller Gains**

$K_p = 5.5$

$K_i = 0.2$

### **Cube initial and final configurations**

$T_{sc\_i} = \begin{bmatrix} 1, 0, 0, 2, \\ 0, 1, 0, 0, \\ 0, 0, 1, 0.025, \\ 0, 0, 0, 1 \end{bmatrix}$

$T_{sc\_f} = \begin{bmatrix} 0, 1, 0, 2, \\ -1, 0, 0, 1, \\ 0, 0, 1, 0.025, \\ 0, 0, 0, 1 \end{bmatrix}$

### **Actual Initial Robot Configuration**

$config\_a = [0.6, -0.7, 0, 0, 0, 0, 3\pi/2, 0, 0, 0, 0, 0]$

### **Reference Initial Robot Configuration**

$config\_r = [0, -0.4159, 0.2, 0, 0, 0, 3\pi/2, 0, 0, 0, 0, 0]$