CENG 4391   Introduction to Robotics

Homework 2 Spring 2016
Due February 1, 2016

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Put your name, Student ID, HW number, date, and the Course Number on your homework.
Please submit a paper copy at the beginning of class. The assignment should be typed.
25 point Each

1. Choose a sensor for position, velocity, or acceleration and give the specifications, describe how it works (physical principle), price, availability, etc. (Only products that we can purchase today!)

2. Compare various methods of proximity sensing as to range, accuracy, type of objects detected, etc. (Consider radar, sonar, capacitive, IR and others such as Hall effect or eddy current sensors.

3. Compare various motors as to advantages and disadvantages. Compare dc servomotors and stepper motors and put the results in a table. Consider the case of control methods for the motors.

4. Look up and report on the progress in autonomous vehicles. Be sure to include DARPA's contests and the Google car – among others. Discuss various ways of navigating and the sensors used. Mention various ways of obstacle avoidance and safety issues.
    As a reference, use at least one Journal Article such as an IEEE article from
          IEEE Xplore in our library (You can download these articles).

Use your own words to introduce the topics. List the references you used for each problem and cite the dates of the articles as best you can.