Robotics 311 : How to build robots and make them move

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ROB 311 – Lecture 18

- Work on your ball-bot

- Announcements
  - HW 4 posted, due11/10 at class start
 - Midterm exam – 11/8

Lab 9

- Last week's lab provided our first ability to send power to the motors

```
commands['motor_1_duty'] = T1
commands['motor_2_duty'] = T2
commands['motor_3_duty'] = T3
ser_dev.send_topic_data(101, commands)
```

- Your goal was to rotate the ball using torques applied in ~8 – 10 directions

- Plot the difference in motion direction between the applied torque and motion

Your plot should look like this

ROBOTICS
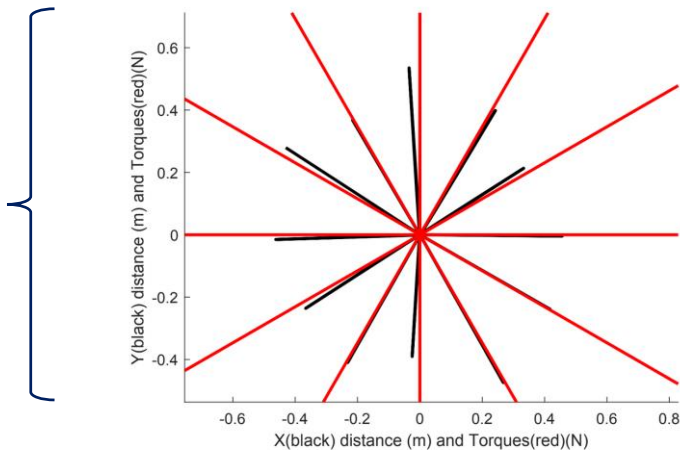
Checklist for Skills

- Be able to rotate the ball in any desired direction

- Be able to read any state variable provided in `message_defs.py`

- Be able to convert motor rotation into ball rotation

- Be able to convert planar torques into motor torques

- Be able to add and save data in Python

- Be able to read and analyze data into MATLAB

- Make sure you know variable units and axis conventions

- You can also wire up your LEDs