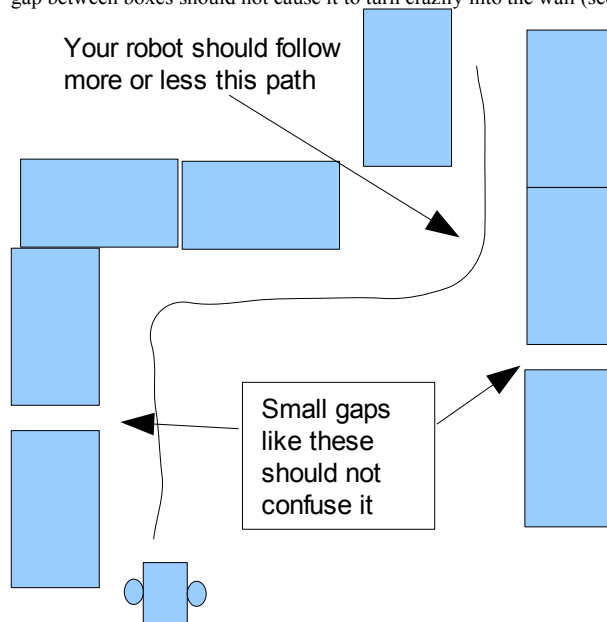


## Lab 3: Wall Following

In this lab, you will build one of the examples you were shown in class, the wall following robot.

### Step-by-step

1. Based on the class notes, construct a wall following robot, and the code to control it. The example you were given in class had difficulty when it encountered a sharp, concave corner. Adapt the design so that the robot will avoid crashing into a wall in front of it.
2. Your robot will be tested by being put in a small maze constructed of cardboard and or wood. It should follow along the walls, attempting to keep a constant distance between it and the wall. Do not make your robot turn too abruptly – a small gap between boxes should not cause it to turn crazily into the wall (see the diagram below)



### To hand in

- 1) A written description of the original design, and changes you had to make to get it to handle obstacles in front of it.
- 2) Your code for the wall follower
- 3) You should demonstrate and explain your idea to one of the TAs.

### A suggestion

One approach to the problem is to periodically make the robot look to the side most of the time, but periodically look forward to see if there is a wall in front of it. A simple way to make a movable mount for the ultrasound sensor is shown in USarm.pdf. Note that you do not have to do it this way, and you can probably find a better way, this is just to get you started.