

91.451, Robotics II
Spring 2004, Prof. Yanco

Lab 7: Vision and Manipulation

Out: Thursday, 8 April 2004

Due: Thursday, 15 April 2004

Note: Lab 6's deadline is extended to Wednesday, 14 April. Show me your robot working and turn in your lab report by the end of office hours that Wednesday (1:00-2:30).

Overview: In this lab, you'll use the vision functions that exist in Pyro to track and move objects. You'll learn to use the pan-tilt-zoom on the camera and the gripper on the robot.

1. Read the sections on the ptz and gripper services on the Pyro Services page (linked from the course web page).
2. Experiment with the ptz and gripper services at the command line, moving the camera and gripper around. Nothing to turn in for this.
3. Write code that will search for a ball of a specified color (you should probably train on the color to eliminate any potential lighting issues), move towards the ball and pick it up in the robot's gripper. Then the robot should look for a bin to drop the ball off at (use one of the brightly colored trash bins – your training might also want to include training for the bin color). Turn in your code and show me the robot working.