

91.451, Robotics II
Spring 2005, Prof. Yanco

Lab 5: Vision and Manipulation

Out: Thursday, 24 March 2005

Due: Thursday, 31 March 2005

Overview: In this lab, you'll use the Phission vision functions 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.

When working with the gripper, never pull an object out of the closed gripper; this causes the gears to become detacked and also damages the rubber lining of the gripper. Open the gripper to remove an object.

3. Write code that will search for a ball, cup or other object of a specified color (you should 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 should also include training for the bin color).

Turn in your code and give me a demo of your code running on the robot before class on Thursday 3/31.