91.549, Robotics II
Fall 2003
Prof. Yanco

Lab 7: Edge Detection

Out: 30 October 2003
Due: 13 November 2003 (to allow you more time for the project write up)

Overview: This lab will introduce you to Canny edge detection and will allow you to compare it with the Sobel method already implemented in Pyro.

In this lab, you'll implement the Canny edge detector. The course web page has links to a site with the C code for the Canny edge detector. You may use and modify this code to insert Canny edge detection into Pyro. (You can also use another implementation of the code that you find on the web. If you use a different piece of code, please cite it appropriately in your lab write up.)

After implementing the Canny detector, do a comparison of it against the Sobel edge detector that is already implemented in Pyro (the edgeDetection method). Are there some circumstances for which the Sobel method is better than the Canny method? When is the Canny method preferable? Feel free to experiment with different types of image filtering before calling your edge detection methods.

Extra Credit: Implement another edge detection method in Pyro. If you use code from the web, please cite it appropriately. Compare this extra method to the Canny and Sobel methods.

What to turn in: Code from grabImage.c, __init__.py, and any pyro brain you wrote to test the code. Also, turn in an example of each detector running on the same image (use saveImage). Turn in a short discussion of your comparisons of the methods.