

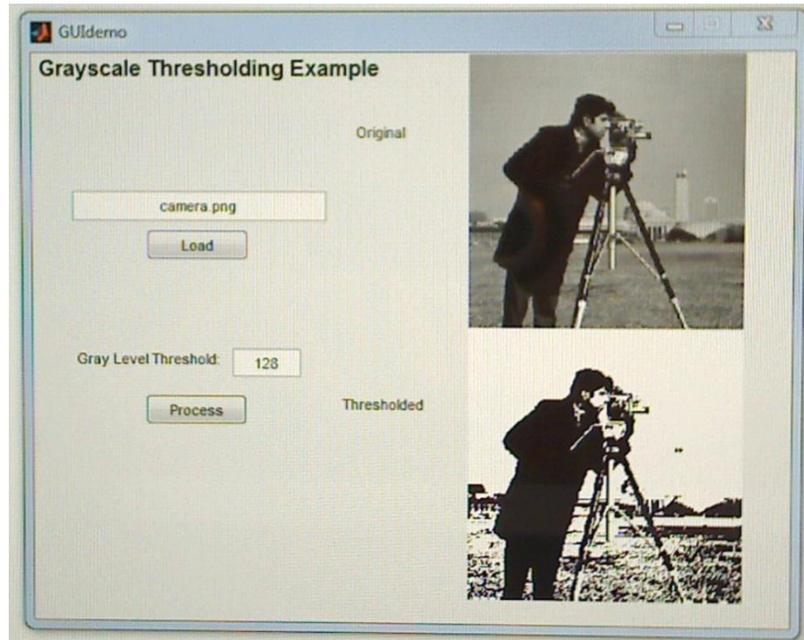
## EE435 Spring 2012 PS05 (Problem Set 05)

**Due: Fri 3/02/2012**

1. Work through [the MATLAB GUI Tutorial.pdf](#) available at the course website under the “Homework” link. There are five associated image files you must download that are available at the same website

At the end of this tutorial, you will have a GUI that contains one figure window, two pushbuttons, and a space to type in the name of an image. The pushbuttons will allow you to display the original image or its photonegative.

Modify this GUI so that it will display two figures, an original grayscale image and the result of thresholding it at a threshold value the user inputs. Your new GUI should look something like this when it is running, and the *Process* button has been pushed:



Your threshold function does not work with a color image, so if the image is color, the “Load” pushbutton should convert it to grayscale during the loading process, and the grayscale image should be displayed as the “Original” image.

When your GUI is up and running, obtain a screen capture of the GUI like my example above, which shows an original image, the threshold value, and the thresholded image. Print out and turn in the screen capture (after cropping away the junk outside the GUI window) and turn it in.

2. Work through the [Using Video in a MATLAB GUI Tutorial.pdf](#). There are six associated files that you must download for it.
  - a. When you get to step 4.a, run the GUI and get a screen capture of the GUI with the webcam pointed at YOUR face. The GUI should be running, displaying live video AND its color photonegative. Print out and turn in the screen capture.
  - b. When you get to step 4.b, run the GUI and get a screen capture of the GUI with the webcam pointed at YOUR face. The GUI should be running, displaying live video AND the binary video after conversion to grayscale and thresholding. The threshold should be set at 150. Print out and turn in the screen capture.
  - c. When you get to step 4.c, run the GUI and get a screen capture of the GUI with the webcam pointed at YOUR face. The GUI should be running, displaying live video AND only the red plane of data. Print out and turn in the screen capture.