Assignment #1

Due September 5, Thursday, 1:00 pm

Requirements:

One report per person is required. Each submission should include a report and source code. Please upload files to Blackboard Dropbox Assignment #1 folder.

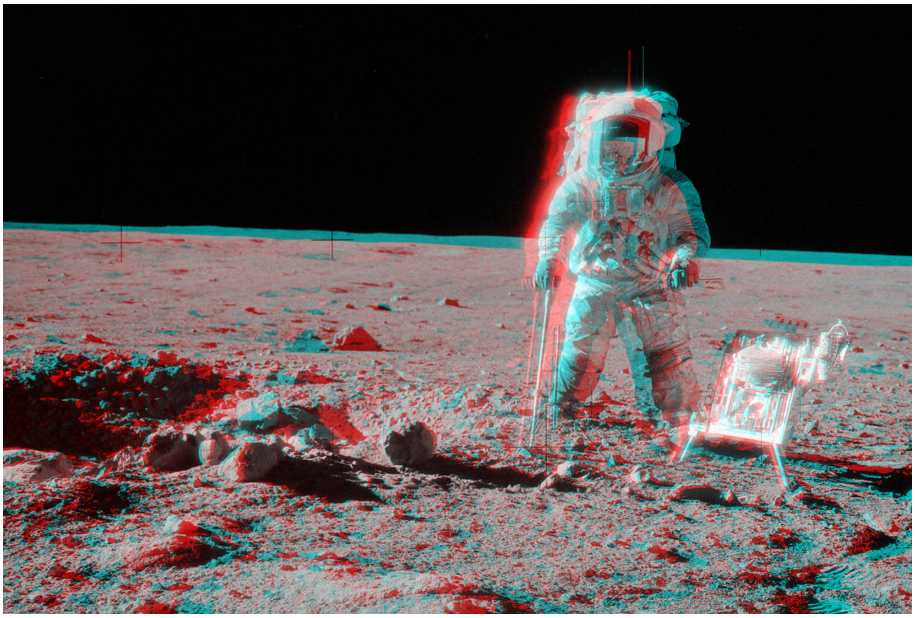
Questions:

1. (50%) Make a self-portrait of yourself in line drawing from a color photo.
   a) Convert color image to gray scale
   b) Edge detection
   c) Reverse the image
   d) Try different image resolutions, edge detection algorithms, and thresholds. Discuss the results.

2. Anaglyph is an old 3D vision technology using the red and cyan glasses. It enables us to see 3D images on any conventional display device. Given stereo image pairs in this Assignment folder, please convert their colors into an appropriate anaglyph color space [1] so that the images appear 3D through a red-and-cyan glasses. You should write a MATLAB or C code to process this. Ask TAs about the red-cyan glasses, or order one from online, or make one from art store with the red and cyan films.

   a) (50%) Convert all images to gray. Turn left-channel image to RED image and right-channel image to Cyan image. Combine them into one. Check the 3D effect with the red-cyan glasses.

   b) (Bonus 25%) Anaglyph can display color 3D image too. Try to use Color Code Space in reference [2] to make the stereo images. Also, determine a minimal disparity for a comfortable viewing experience. Here is a useful tip about how to make 3D anaglyph image using Photoshop [1].



References:

1. http://graphicssoft.about.com/cs/photoshop/ht/3danaglyph.htm
2. http://en.wikipedia.org/wiki/RG_color_space