

Methods in Image Analysis - Assignment 2

February 8, 2006

Due 2/9/06

To complete this assignment you will need to have a working build of ITK. This is the only programming assignment that doesn't require the use of VTK, FLTK, or myITKgui. To complete the assignment, you must write a (command-line) program that does all of the following using ITK:

1. Create a 100x100 image of unsigned char pixels, with origin (0,0) and spacing (1,1).
2. Fill the image with pixel value 0. Draw a filled circle centered at (50, 50) with radius 25 and pixel value 255. Draw a second filled circle centered at (50, 50) with radius 10 and pixel value 160. To iterate through the image you will use an image region iterator and its `GetIndex()` function. For drawing a circle as specified, consider the Euclidean distance function $d(\mathbf{u}, \mathbf{v}) = \sqrt{\mathbf{u} \cdot \mathbf{v}}$ as a starting point...
3. Blur the image with a filter of your choice. The software guide describes blur filters. Feel free to apply other filters as well, just for fun.
4. Write the final image to an 8-bit grayscale PNG file using an `itkImageFileWriter` object. Again, the software guide is invaluable here.

Apart from the software guide, you may also wish to consult the online ITK documentation at www.itk.org. Either resource will likely spare you much anguish.