Subject: Re: Reading DICOM images
Posted by Peter Clinch on Wed, 25 Jan 2006 13:01:41 GMT
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holgi0251@lycos.de wrote:

> I am trying to process DICOM-images of human lung tissue from a Siemens
> Multidetector CT-scanner. The gray-levels should range from -1000 HU to
> something like +2000. When I read the image slices ("im =
> read_dicom(filename, image_index=1) the grey levels are compressed to
> the range 0 ... 255. The situation slightly improves, when I predefine
> the variable by "im = fltarr(512,512)". But I still don´t get negative
> graylevels.

There are a few possible Gotchas in there. First up, there's actually no such thing as a "DICOM file": what DICOM specifies is what will come over a network connection when you ask for an image. Most people, understandably, store files as what would come over a connection in the same order, but there's no need to.

You need to know what the file description says is specified. CT data is often pulled in from the basic hardware as 12 bit unsigned integers which gives you a 4K range but will obviously /not/ allow for negative numbers. Because the data is inherently digital it's quite unlikely to be in a floating point representation, and it is entirely likely the actual stored value is an unsigned or always positive integer that you'll need to window to get the right HU value.

You may need to do a little hacking to see what the data representation really is. It's not /too/ hard to work through a DICOM header and look around, but that does assume you're happy doing a bit of low level byte to byte parsing.

Pete.
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