

dicom_aim_markup_reader

November 23, 2018

```
import matplotlib.pyplot as plt
import pydicom
from pydicom.data import get_testdata_files

print(_doc_)

filename = "00f2c163.dcm"
ds = pydicom.dcmread(filename)

# get the pixel information into a numpy array
dicom_img_data = ds.pixel_array
plt.imshow(ds.pixel_array, cmap=plt.cm.bone)

#print('The image has {} x {} voxels'.format(data.shape[0], data.shape[1]))
#data_downsampling = data[:, ::8, ::8]
print('The downsampled image has {} x {}
      voxels'.format(data_downsampling.shape[0],
                    data_downsampling.shape[1]))

# copy the data back to the original data set
ds.PixelData = data_downsampling.tobytes()
# update the information regarding the shape of the data array
ds.Rows, ds.Columns = data_downsampling.shape

# print the image information given in the dataset
print('The information of the data set after downsampling: \n')
print(ds)
print("SOP Instance UID")
print(ds[0x08,0x18].value)
```

Automatically created module for IPython interactive environment
The downsampled image has 64 x 64 voxels
The information of the data set after downsampling:

"(0002,0000)", "UL", "0004H", "170 [00AAH]", "File Meta Information Group Length"
"(0002,0001)", "OB", "0002H", "00 01", "File Meta Information Version"
"(0002,0002)", "UI", "001AH", "1.2.840.10008.5.1.4.1.1.2", "Media Storage SOP Class UID"
"(0002,0003)", "UI", "003CH", "1.3.46.670589.54.2.6676560453583030607.21930980791249219363", "Media Storage SOP Instance UID"
"(0002,0010)", "UI", "0014H", "1.2.840.10008.1.2.1", "Transfer Syntax UID"
"(0002,0012)", "UI", "0012H", "1.2.840.113820.81", "Implementation Class UID"
"(0008,0008)", "CS", "0018H", "DERIVED\SECONDARY\AXIAL ", "Image Type"
"(0008,0012)", "DA", "0008H", "20181023", "Instance Creation Date"
"(0008,0013)", "TM", "000AH", "185241.911", "Instance Creation Time"
"(0008,0016)", "UI", "001AH", "1.2.840.10008.5.1.4.1.1.2", "SOP Class UID"
"(0008,0018)", "UI", "003CH", "1.3.46.670589.54.2.6676560453583030607.21930980791249219363", "SOP Instance UID"
"(0008,0020)", "DA", "0008H", "20140408", "Study Date"
"(0008,0021)", "DA", "0008H", "20140408", "Series Date"
"(0008,0023)", "DA", "0008H", "20181023", "Content Date"
"(0008,0030)", "TM", "0006H", "131230", "Study Time"
"(0008,0031)", "TM", "0006H", "134749", "Series Time"
"(0008,0033)", "TM", "000AH", "185242.021", "Content Time"
"(0008,0060)", "CS", "0002H", "CT", "Modality"
"(0008,0070)", "LO", "0018H", "Philips Medical Systems ", "Manufacturer"
"(0008,0080)", "LO", "0002H", "NA", "Institution Name"
"(0008,0090)", "PN", "0002H", "NA", "Referring Physician's Name"
"(0008,103E)", "LO", "002EH", "LUNG 5mm_SN_102_cropped_10/23/2018 6:52:41 PM ", "Series Description"
"(0008,1050)", "PN", "0002H", "NA", "Performing Physician's Name"
"(0008,1070)", "PN", "0002H", "NA", "Operators' Name"
"(0008,1090)", "LO", "000CH", "BrightSpeed ", "Manufacturer's Model Name"
"(0010,0010)", "PN", "0002H", "NA", "Patient's Name"
"(0010,0020)", "LO", "0008H", "00000000", "Patient ID"
"(0010,0021)", "LO", "0002H", "NA", "Issuer of Patient ID"
"(0010,0030)", "DA", "0008H", "00000000", "Patient's Birth Date"
"(0010,0032)", "TM", "0000H", "", "Patient's Birth Time"
"(0010,0040)", "CS", "0002H", "M ", "Patient's Sex"
"(0010,1000)", "LO", "0002H", "NA", "Other Patient IDs"
"(0018,0050)", "DS", "0002H", "5 ", "Slice Thickness"
"(0020,000D)", "UI", "0034H", "1.2.840.113619.2.55.3.1119889753.428.1396905383.920", "Study Instance UID"
"(0020,000E)", "UI", "003CH", "1.3.46.670589.54.2.30137080221093709901.25149148593160403074", "Series Instance UID"
"(0020,0010)", "SH", "0006H", "22186 ", "Study ID"
"(0020,0011)", "IS", "0004H", "1000", "Series Number"
"(0020,0013)", "IS", "0002H", "45", "Instance Number"
"(0020,0020)", "CS", "0000H", "", "Patient Orientation"
"(0020,0032)", "DS", "0014H", "-190.8\ -175.3\ -48.75", "Image Position (Patient)"

"(0020,0037)", "DS", "000CH", "1\0\0\0\1\0 ", "Image Orientation (Patient)"
 "(0020,0052)", "UI", "003CH", "1.2.840.113619.2.55.3.1119889753.428.1396905383.921.16860.5", "Frame of Reference UID"
 "(0020,1041)", "DS", "0008H", "-113.75 ", "Slice Location"
 "(0028,0002)", "US", "0002H", "1 [0001H]", "Samples per Pixel"
 "(0028,0004)", "CS", "000CH", "MONOCHROME2 ", "Photometric Interpretation"
 "(0028,0006)", "US", "0002H", "0 [0000H]", "Planar Configuration"
 "(0028,0010)", "US", "0002H", "512 [0200H]", "Rows"
 "(0028,0011)", "US", "0002H", "512 [0200H]", "Columns"
 "(0028,0030)", "DS", "0012H", "0.767578\0.767578 ", "Pixel Spacing"
 "(0028,0100)", "US", "0002H", "16 [0010H]", "Bits Allocated"
 "(0028,0101)", "US", "0002H", "16 [0010H]", "Bits Stored"
 "(0028,0102)", "US", "0002H", "15 [000FH]", "High Bit"
 "(0028,0103)", "US", "0002H", "0 [0000H]", "Pixel Representation"
 "(0028,0301)", "CS", "0002H", "NO", "Burned In Annotation"
 "(0028,1050)", "DS", "0004H", "-700", "Window Center"
 "(0028,1051)", "DS", "0004H", "1000", "Window Width"
 "(0028,1052)", "DS", "0006H", "-1024 ", "Rescale Intercept"
 "(0028,1053)", "DS", "0002H", "1 ", "Rescale Slope"
 "(0028,1054)", "LO", "0002H", "HU", "Rescale Type"
 "(0040,9096)", "SQ", "", "", "Real World Value Mapping Sequence"
 "(0054,1000)", "CS", "0000H", "", "Series Type"
 "(2001,0010)", "LO", "0016H", "Philips Imaging DD 001", ""
 "(2001,0011)", "LO", "0016H", "Philips Imaging DD 002", ""
 "(2001,106E)", "SH", "0000H", "", ""
 "(2001,116C)", "LO", "0000H", "", ""
 "(7FE0,0010)", "OW", "080000H", "", "Pixel Data"

SOP Instance UID

1.3.46.670589.54.2.6676560453583030607.21930980791249219363

