

Basic image reading/writing

Note: do not use “image” as the name of the variable that will store your images.

1. Read the image stored in file 'Cell_Colony.jpg' with ***imread***
 - a) Check the size of the image with ***size***
 - b) Check how it is stored in the memory with ***whos***
What is the number of possible values?
What if it were signed int8?
 - c) Visualize the image with ***imagesc***
2. The image ***IMG00058*** is in DICOM format. Open (with ***dicomread***) and visualize it. Open the header information with ***dicominfo***.
 - a) What modality is it?
 - b) What is matrix size?
 - c) What is the patient weight?
 - d) Visualize the image with ***imagesc***
3. Read the image stored in file 'O_3_44Salino10X_1.BMP' with ***imread***.
 - a) Check the size of the image with ***size***
 - b) Check how it is stored in the memory with ***whos***
 - c) Visualize the image with ***imshow***
 - d) Why do you think is it a 3D matrix? Visualize each component.
4. Read the image stored in file ***RM_1slice.raw***.
 - a) Why can't we use ***imread***?
 - b) Try ***fopen*** + ***fread***. Write the Matlab code you used:
 - c) Check that your image is correctly read by displaying all the current variables in memory (with ***whos***) and checking the size of your image (with ***size***).
 - d) Display the image with ***image*** and ***imagesc*** functions. Do ***colormap(gray)*** to change the color table to *grayscale*
 - e) Why do these functions give different result?
Do *Insert colorbar*.



Check the maximum and minimum value in the image (***min***, ***max***)

- f) ***imshow*** function solves problems that you have seen when displaying images, check it.

5. Read the image `t1-head_1.raw` stored in folder `t1-head`
 - a) What tomographic slice is that? How could you visualize a different one?
 - b) Write a loop that reads the images stored in folder `t1-head`, join them in a 3D image and write them in a new file. You may want to use ***strcat***, ***num2str***