Image Processing Assignment

Assignment due to: 23.06.2017

Upload link: https://www.dropbox.com/request/TEn72Oelt6lRTlrutq8s

Image indexes are calculations, which can be performed using a combination of bands. These indexes are useful, since depending on the band combination, different information can be highlighted and, therefore, recognized.

In the dropbox link, inside folder material > images, there is an image called RGBNIR.tif. This image has 4 bands (Red, Green, Blue and Near-Infrared).

TASKS:

1. (5P + 5P) Go to this link (http://www.indexdatabase.de/db/i.php) and choose 10 different indexes to be implemented. Choose only indexes, which you can calculate using the available bandas (R,G,B or NIR). Plot the equations with proper identification using matplotlib and LaTex syntax. Five extra points will be granted if you implement extra 10 indexes.
2. (10P) Apply each of the functions to the RGBNIR.tif and plot the final result.
3. (5P) Create an option for the user to save the image in case it is requested.

HINT: in case you have MemoryError, it is probably because your computer does not have enough memory to handle this image. If that is the case, use a clip of the image instead (see image below).

Good luck! =)