

TNM087 - Image Processing and Analysis

SimpleReplace.m

Rows-Columns-Rectangular operations are especially easy in Matlab. Here you replace a collection of rows columns and grid points with special color values

Background:

Accessing rectangular parts of images can be done with one command line

Task:

Read in the image given by the pathname. Open a new figure and assign it the output filehandle `figh`.

Change the original image as follows:

- a) Replace all pixels in the rows with indices given by `rows` by red pixels with maximum pure red color
- b) Replace all pixels in the columns with indices given by `cols` by green pixels with maximum pure green color
- c) Replace all pixels in the rectangle specified in `box` by black pixels
- d) The intersection of the rows and cols define grid points replace the pixels at these positions with white pixels

Syntax:

`function figh = SimpleReplace(filename, rows, cols, box)`

Hints:

For loops are not necessary and not accepted as solutions

Note that if you want to replace the colors of pixels in a region you have to change the values in the red, green and blue channels. In general you may need more than the only line of code in the template.

You can assume that the specifications of the regions are correct. You may add additional tests in which you check some conditions. Examples are (1) positive integer indices (2) index range within the size of the image. If you implement a test decide what the consequences are: (A) return immediately with an error message, (B) repair violations automatically and continue, (C) interactive repair before continuing with the computations