

CMT107 : Visual Computing - Lab Sheet 6

Image Processing

Download the files VC06.java and Daffodil.jpg from Learning Central. This program implemented a simple image processing algorithm, which converts a colour image into a grayscale image. It demonstrates basic methods of reading, saving, drawing, and processing images. The program first load the colour image file Daffodil.jpg. The colour image is converted into a grayscale image when key 'p' is pressed. The result can be saved into a file named DaffodilG.jpg if key 's' is pressed. Note that to read in the image file Daffodil.jpg correctly, you should put it in the project root directory.

Run the program. Press 'p' to convert the colour image into grayscale image, and then press 's' to save the grayscale image. Check that the program works. Examine the source code, and identify the lines of image reading, saving, drawing, and processing. Try to modify the program, so that when 'p' is pressed, the program will perform the following operations:

- Invert the colour of the grayscale image, i.e., original gray level v is replaced by $255-v$
- Invert the blue component of the original colour image
- Rescale the green component by 0.5, and 1.5. Note that when you rescale the colour values, you need to cast the value to **int** type, and the maximum value should not exceed 255.
- Flip image upside-down.