
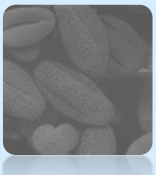


A01 BASIS IMAGE PROCESSING (15 MARKS/2 = 7.5%)

PROBLEMS:

1. Write a program to open an existing image and produce its red, green, blue and grayscale versions. [3 marks]
2. Write a program to zoom images by a given factor in (0,10]. You must use a function to zoom the image, which can handle
    a. nearest-neighbor, and [3 marks]
    b. bilinear interpolation. [3 marks]

    I have included four images, two large originals (hggray.png, hgrgb.png), and their zoomed-out versions (hggraysmall.png, hgrgbsmall.png). Test you algorithm by computing the sum of squared difference (SSD) when you scale-up the given small images by a factor of 4 by comparing with the original images.

3. Implement the histogram equalization and enhance the given grayscale image (ssfrohist.tif). [3 marks]
4. BONUS: Implement the histogram equalization and enhance the given color image (caforhist.png). Briefly outline your algorithm. [5 marks]

WHAT TO SUBMIT:

Compile a two-paged pdf document including the important parts of your Matlab code, a brief descriptions of algorithms, and results: images (very important), numerical results, and comparisons. Rename the file as indexno_a01.pdf. The number of pages must be two. Do not include a cover page. You must submit the appropriately named pdf file only. Do not submit compressed archives (zip, rar, etc.). Include your name and index number at the top right corner of the first page.

ASSESSMENT CRITERIA:

Item	Description	Marks
1.	Results: images (3 x4 = 12)	12 marks
2.	Report (code, references, clarity)	3 marks
3.	Bonus: histogram equalization for a color image	5 marks
4.	Report exceeding the two-page limit	- 5 marks

PLAGIARISM:

Please note that plagiarism is a serious offence. Please do not copy from others or from the Internet. Submit only your genuine code and results.