Image processing

ASSIGNMENT 1: COLOUR PROCESSING (2024)

# The report:

This assignment requires of you to write a number of small programs in MATLAB

MATLAB has built-in colour-conversion functions (such as RGB2HSI.m, etc.) and you may use them, but you must make sure that you understand exactly what such a function does.

You must write a short report discussing the questions and the results, and you must submit your code as an appendix. I put no limit on the number of pages — use a sensible number of pages for the task.

Your report must contain some illustrative examples of the results of all numbers. However, for question 1, a printout will be useless – one must view it on a screen. However, do append a photo of the result on the screen.

# The assignment:

**1** Write a program that will display parallel lines close to each other in two alternating primary colours (for example a red line followed by a green line, followed by a red line, followed by a green line, etc.). Your program must display patches where each of the pairs of primaries as well as all three primaries together are shown. The idea is then to view the screen from afar so that the observer senses the colour associated with the combination of those primaries. (This effect is quite successful.)

1. Write a program that will assign a suitable name to a given RGB triplet. Your names must be a hue (such as ’RED’,’ORANGE’,’GREEN-YELLOW’,BLUE-PURPLE’, etc.) preceded by some adjectives (such as ”light”, ”greyish”, ”dark”, ”creamy”, etc.). Use your own imagination.
2. Write a program that can display a colour image, as well as any one of the primary colour plans (RED, GREEN, BLUE) and also the secondary planes (CYAN, MAGENTA, YELLOW), as well as the INTENSITY image. The particular colour plane must be shown in its own colour (not just in grey), and the intensity image must be shown in grey. Use 256 intensity levels everywhere.