

SM 233. Intro to applied math. Homework 3

Mrinal Raghupathi

Posted 1/26/2012

Submission deadline

Posted : Thursday, 1/26/2012

Due : Thursday 2/2/2012 at 2359

Problems

Halving an image

The objective of this problem is to use the basic MATLAB routines to halve the size of an image. The *test* image for this problem is a picture of Highclere castle that has been posted in the commons dropbox folder. In-class we learnt about `imread` and `imshow` and we saw that an image can be treated as a multidimensional array.

Using MATLAB's array manipulation operations produce an image that is half the height and half the width of the original in two ways.

The idea suggested in class was to replace groups of four pixels with a single pixel.

First produce a *naive* half-image by preserving odd rows and columns.

Second produce a *better version* by replacing each four-pixel group by their average.

Use basic slicing and indexing to achieve this. Don't just pull out an in-built function.

Filename `lastname_firstname_alfa_imagehalf.m`

Note Your program has to work for any image. The highclere image is a test.

Bonus As an added extra provide numerical evidence for the difference between these two images.