

Assignment 2

Due by October 3, 2019

This assignment is to study the effect of discrete Fourier transform (DFT), discrete cosine transform (DCT), and discrete wavelet transform (DWT) on gray level images.

1. Apply an FFT on images *D04.raw* (pressed cork) and *D23.raw* (pebbles), respectively; requantize the *Fourier power spectrum*, then plot or print graphical results.
2. Apply a DCT on images *D04.raw* and *D23.raw* after subtracting 128 from each pixel value, requantize the *DCT coefficients*, then plot or print graphical results.
3. Do 3-scale Daubechies' Wavelet transform on each of *D04.raw* and *D23.raw* images, requantize the wavelet coefficients, then show your graphical results.
- *4. Partition each of images *D04.raw* and *D23.raw* into 8×8 blocks, do DCT on each block after subtracting 128 from each pixel value, then quantize the DCT coefficients (you can use *Qtable*) (both DC and AC terms) into $[0, 255]$, then show your graphical results (this is an extra work).

cs60:/user/prof/cchen/.WWW/CS4520/Data
<http://www.cs.nthu.edu.tw/~cchen/CS4520/Data>