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%Aly and Anshuman
clc;
clear;
close all;

%%WAVY 1

I = imread("Wavy 1.png");

figure(1)
subplot(2,3,1),imshow(I);
title("Wavy 1 Original");

f2 = 1/2;
f4 = 1/4;
J = imresize(I,f2);
K = imresize(I,f4);

subplot(2,3,2),imshow(J);
title("Subsampled by 2")
subplot(2,3,3),imshow(K);
title("Subsampled by 4")

%Blockproc function to average 2x2 blocks
fun = @(block_struct) mean(block_struct.data(:),"all");

B = blockproc(I,[2 2],fun);
B = uint8(B);
subplot(2,3,4),imshow(B)
title("Averaged")

L = imresize(B,f2);
L = uint8(L);
subplot(2,3,5),imshow(L)
title("First Subsample")

K = imresize(L,f2);
K = uint8(K);
subplot(2,3,6),imshow(K)
title("Second Subsample")
%montage({I,J,K,B,L,K},"Size",[2 3]);

%%WAVY 2

I = imread("Wavy 2.png");

figure(2)
subplot(2,3,1),imshow(I);
title("Wavy 2 Original");

f2 = 1/2;
f4 = 1/4;
J = imresize(I,f2);
K = imresize(I,f4);

subplot(2,3,2),imshow(J);

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title("Subsampled by 2")
subplot(2,3,3),imshow(K);
title("Subsampled by 4")

%Blockproc function to average 2x2 blocks
fun = @(block_struct) mean(block_struct.data(:), "all");

B = blockproc(I,[2 2],fun);
B = uint8(B);
subplot(2,3,4),imshow(B)
title("Averaged")

L = imresize(B,f2);
L = uint8(L);
subplot(2,3,5),imshow(L)
title("First Subsample")

K = imresize(L,f2);
K = uint8(K);
subplot(2,3,6),imshow(K)
title("Second Subsample")

%%Art Decor
I = imread("Art Decor.png");

figure(3)
subplot(2,3,1),imshow(I);
title("Art Decor Original");

f2 = 1/2;
f4 = 1/4;
J = imresize(I,f2);
K = imresize(I,f4);

subplot(2,3,2),imshow(J);
title("Subsampled by 2")
subplot(2,3,3),imshow(K);
title("Subsampled by 4")

%Blockproc function to average 2x2 blocks
fun = @(block_struct) mean(block_struct.data(:), "all");

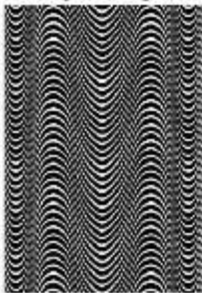
B = blockproc(I,[2 2],fun);
B = uint8(B);
subplot(2,3,4),imshow(B)
title("Averaged")

L = imresize(B,f2);
L = uint8(L);
subplot(2,3,5),imshow(L)
title("First Subsample")

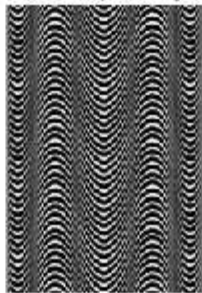
K = imresize(L,f2);
K = uint8(K);
subplot(2,3,6),imshow(K)
title("Second Subsample")

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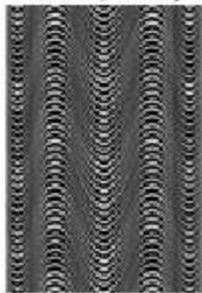
Wavy 1 Original



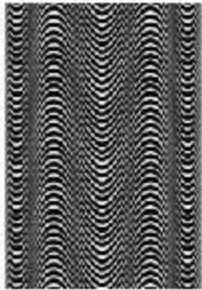
Subsampled by 2



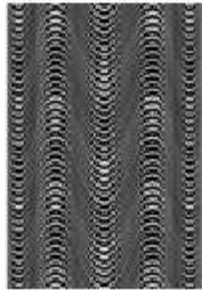
Subsampled by 4



Averaged



First Subsample



Second Subsample



Wavy 2 Original



Subsampled by 2



Subsampled by 4



Averaged



First Subsample



Second Subsample



Art Decor Original



Subsampled by 2



Subsampled by 4



Averaged



First Subsample



Second Subsample

