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                                test_measures_approx
function [avg_ent, std_dev] = test_measures_approx(input_im,N)
im_size = size(input_im);
num_rows = im_size(1);
num_cols = im_size(2);
row_length = floor(num_rows/N);
col_length = floor(num_cols/N);
ent_vector = [ ];
avg_ent = 0;
num_iterations = 1;
increment = ceil((N - 1) / sqrt(N));
for i = 0 : increment : N - 1
    for j = 0 : increment : N - 1
        temp_im = input_im(1 + i*row_length : (i+1)*row_length, 1 + j*col_length :
(j+1)*col_length, 1 : 3);
        temp_ent = entropy(temp_im);
        avg_ent = avg_ent + temp_ent;
        ent_vector = [ent_vector entropy(temp_im)];
        num_iterations = num_iterations + 1;
    endfor
endfor
avg_ent = avg_ent / num_iterations;
std_dev = std(ent_vector);
endfunction

```