identify_fine_fast

```
function [region_matrix N S_mat prob_mat] = identify_fine_fast(I)

%This is a completely stripped down approximation of identify_features_fine that
identifies small features extremely quickly

[N Y X] = maximize_std_dev_fast(I) %used to calculate N, where N^2 is the number of
regions the image is partitioned into

[A B C D] = score_image(I,N,X,Y); %generates a series of vectors, though we use only
D, which is a measure of information contained in each region

temp_mat = vec2mat(D,N); %turns D into a matrix where each entry corresponds to the
information content of region (i,j) of the image partition

S_mat = generate_S_mat_distribution(temp_mat); %generates a score from 0 to 1 of how
notable the information content of each region is

s_smat = std(S_mat(:)); %the std dev of S_mat, which is used as the basis for
determining how similar two regions are

bg_mat = find_bg_color(I,N); %a matrix (bg_mat) that contains a measure of how
dominated each region is by its most frequent color

prob_mat = generate_S_mat_distribution(bg_mat); %generates a score from 0 to 1 of
how dominated each region is by its most frequent color using bg_ma

region_matrix = [1 : N^2];

region_matrix = reshape(region_matrix,[N N]);

endfunction
```