```
function [final_cluster_array] = optimize_EMC_cluster(dataset, N)

total_std = 0;

%calculates an approximation of the standard deviation
for i = 1 : N

  total_std = total_std + std(dataset(:,i));

endfor

s = 3*(total_std / N);

%Initializes variables ----------------------------------------------------

num_iterations = 25;
num_items = size(dataset,1);

delta = 0;

max_change_ent = 0;
prior_ent = log2(num_items);

for i = 1 : num_iterations

  [cluster_array] = generate_EMC_cluster(dataset, delta, N);

  current_ent = calculate_category_entropy(cluster_array);
  change_ent = abs(current_ent - prior_ent);

  if(change_ent > max_change_ent)

    max_change_ent = change_ent;
    final_delta = delta;
    final_cluster_array = cluster_array;

  endif

  delta = delta + s/num_iterations;
  prior_ent = current_ent;

endfor

endfunction
```