

```

                                partition_vec
function [N_0, s_0] = partition_vec(input_vec)

vec_size = size(input_vec);
num_cols = vec_size(2);

alpha = .5;

N_0 = ceil(log2((num_cols)/2));
N_1 = ceil((1 - alpha)*N_0);
s_0 = test_entropy_vec(input_vec, N_0);
s_1 = test_entropy_vec(input_vec, N_1);
if(s_1 > s_0)
    while(s_1 > s_0 && (ceil((1 - alpha)*N_0) > 1))
        N_0 = N_1;
        N_1 = ceil((1 - alpha)*N_0);
        s_0 = test_entropy_vec(input_vec, N_0);
        s_1 = test_entropy_vec(input_vec, N_1);
    endwhile
else
    N_1 = ceil((1 + alpha)*N_0);
    s_0 = test_entropy_vec(input_vec, N_0);
    s_1 = test_entropy_vec(input_vec, N_1);
    while(s_1 >= s_0 && ceil((1 + alpha)*N_0) <= num_cols)
        N_0 = N_1;
        N_1 = ceil((1 + alpha)*N_0);
        s_0 = test_entropy_vec(input_vec, N_0);
        s_1 = test_entropy_vec(input_vec, N_1);
    endwhile
end

```

```
                                partition_vec  
    endwhile  
endif  
endfunction
```