

```

%clears the memory and the command prompt
clear
clc
pkg load image
%-----

file_path = '/Users/charlesdavi/Desktop/Datasets/UCI/wine.txt';
orig_dataset = csvread(file_path);
orig_num_rows = size(orig_dataset,1);
N = size(orig_dataset,2) - 1;

row_percentage = 1

num_rows = floor(orig_num_rows*row_percentage)
selected_rows = randperm(orig_num_rows,num_rows);

dataset = orig_dataset(selected_rows,:);

%UCI WINE ONLY
%moves the classifier to the last column-----

temp = dataset(:,1);
dataset(:, 1) = dataset(:, N+1);
dataset(:, N+1) = temp;

%=====
%NORMALIZES DATASET
%=====

%calculate the number of digits in each dimension-----
digit_vector = log10(mean(abs(dataset(:,1:N))))
max_dim = ceil(max(digit_vector))
min_dim = floor(min(digit_vector))

s = std(digit_vector);

temp_vector = digit_vector > s;
max_dimensions_vector = find(temp_vector == 1);

%normalizes the largest category of dimensions-----
num_items = size(max_dimensions_vector,2);
weight_vector = ones(1,N+1); %used to normalize the dataset

%sets the original accuracy
[accuracy output_matrix error_vector] = find_NN_dataset(dataset, []);

```

```
max_accuracy = accuracy;

for i = min_dim : max_dim

    for j = 1 : num_items

        current_index = max_dimensions_vector(j);
        current_num_digits = digit_vector(current_index);

        diff = i - current_num_digits;

        weight_vector(current_index) = 10^diff;

    endfor

    modified_dataset = dataset.*weight_vector;
    [accuracy output_matrix error_vector] = find_NN_dataset(modified_dataset, []);

    if(accuracy > max_accuracy)

        max_accuracy = accuracy;
        final_weight_vector = weight_vector;
        final_dataset = modified_dataset;

    endif

endfor

max_accuracy
```