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**Codes Position:** / codes

**Pictures Position**: /results

**Explaination:** /README.pdf

**Observation:**

For problem 2:

I don’t get what the K-Nearest Neighbors data structure but I implement a function to find it.

function [dists,neighbors] = top\_K\_neighbors( X\_train,X\_test,K )

% Input:

% X\_test the test vector with P\*1

% X\_train and y\_train are the train data set

% K is the K neighbor parameter

[~, N\_train] = size(X\_train);

test\_mat = repmat(X\_test,1,N\_train);

dist\_mat = (X\_train-double(test\_mat)) .^2;

% The distance is the Euclid Distance.

dist\_array = sum(dist\_mat);

[dists, neighbors] = sort(dist\_array);

% The neighbors are the index of top K nearest points.

dists = dists(1:K);

neighbors = neighbors(1:K);

end

For the resulting pictures, we can see that some clouds are not classified correctly and some pixels which have the same color with the sky are classified by mistake.

To correct this, we can add the texture recognition into the algorithm.