This package is used to learn descriptor, mainly aiming at feature based image matching in difficult situations like severe viewpoint change images, from training data that are generated in carefully controlled registered image pairs and present in patch pair forms, in which positive and negative means matching and non-matching. This specific topic is related generally to representation learning, as well as similarity learning.

1) Data:

Brown dataset. A widely used and classical datasets for descriptor learning. All the training patches are generated surrounding detected feature points, while the scale, rotation of the local features surrounding regions are determined and verified based on multi view patch-based stereo dense matching data. More info about it could be found here:

http://www.cs.ubc.ca/~mbrown/patchdata/patchdata.html

2)

**Chen\_descriptortrainingdatagenerate**

function[x\_pos,x\_neg,x,labels,current\_amount] = Chen\_descriptortrainingdatagenerate(PatchDir,infoFileName,Num\_patcheachcolumn)

% read the original patch data and generate training data

%param@ x\_pos,x\_neg, postive and negative samples for training

%param@ current\_amount, number of sample for each feature point(one point, 2 or more patches)

**Chen\_descriptortrainingdatagenerate\_run.m**

the main file for generating training data. See files for more details