
Link:
https://drive.google.com/drive/folders/1w2Y7kYslNZE_pvEyFxsGmpBcue7vjRM3?usp=sharing
Report (all in notebook below the performance report cell)
1st: Tiny images representation and nearest neighbor classifier

time consumed: 1.1250927448272705 seconds

accuracy: 20.75 %

Parameters: n_neighbors = 20

I resize the size of the dataset into 16*16 then apply it to the knn classifier with k=20

2nd: Bag of SIFT representation and nearest neighbor classifier

time consumed:208.05697464942932 seconds

accuracy 46.75 %

Parameters: step_size = 10, scale = 8, n_clusters=50, k in knn =20

I first map the train data into dense key points,
and then fed it in steps to fit my k means generator.
After that I use my trained kmeans generator to produce kmean features to fit sklearn.KNeighborsClassifier

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3rd: Bag of SIFT representation and linear SVM classifier

time consumed: total 8.930976152420044 seconds

accuracy: When C=4.75 the highest accuracy is 56.75%

Parameters: step_size = 10, scale = 8, n_cluster=50 = 50, C=4.75

I called OneVsRestClassifier from sklearn library and wrap it with a loop to test the best C value for it.
Notes: I used some variables in previous part, otherwise it will take about 40-70 secs to generate the result