MCA Assignment 1

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Part 1

The following are the results for good(1) , ok(2) and junk(3) ground truth values separately as well as overall for all the 33 query files (without using the bounding box)

Indexes for evaluation are taken as 0-200 for good, 200-500 for ok and the rest for junk.

The following results are in the order of the following:

The features are stored in q1_feats folder while the evaluation is done by eval_all.py

ashmolean_2_query.txt
balliol_2_query.txt
cornmarket_1_query.txt
keble_1_query.txt
bodleian_1_query.txt
balliol_1_query.txt
pitt_rivers_1_query.txt
balliol_3_query.txt
bodleian_2_query.txt
hertford_1_query.txt
cornmarket_3_query.txt
christ_church_2_query.txt
keble_3_query.txt
hertford_2_query.txt
magdalen_3_query.txt
pitt_rivers_2_query.txt
magdalen_1_query.txt
keble_2_query.txt
christ_church_3_query.txt
hertford_3_query.txt
magdalen_2_query.txt
pitt_rivers_3_query.txt
bodleian_3_query.txt
all_souls_1_query.txt
ashmolean_3_query.txt
radcliffe_camera_1_query.txt
radcliffe_camera_2_query.txt
cornmarket_2_query.txt
christ_church_1_query.txt

ashmolean_1_query.txt
all_souls_3_query.txt
all_souls_2_query.txt
radcliffe_camera_3_query.txt

The average execution time for all the queries is: 0.4899222128319018

Results

Results:
Precision1 : 0.015
Recall1 : 0.25
Precision2 : 0.01
Recall2 : 0.23076923076923078
Precision3 : 0.0013149243918474688
Recall3 : 1.0
Average Precision:
Overall Precision3 : 0.00612285206399368
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.005
Recall1 : 0.16666666666666666
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0008766162612316459
Recall3 : 0.8
Average Precision:
Overall Precision3 : 0.003555204424254395
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.01
Recall1 : 0.4
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0008766162612316459
Recall3 : 1.0
Average Precision:
Overall Precision3 : 0.002567647639739285
Overall Recall3 : 1.0

==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0006574621959237344
Recall3 : 0.75
Average Precision:
Overall Precision3 : 0.0021726249259332413
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0008766162612316459
Recall3 : 0.6666666666666666
Average Precision:
Overall Precision3 : 0.005925340707090658
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.005
Recall1 : 0.16666666666666666
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0008766162612316459
Recall3 : 0.8
Average Precision:
Overall Precision3 : 0.003555204424254395
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0004383813061582295
Recall3 : 0.6666666666666666
Average Precision:
Overall Precision3 : 0.0015800908552241755

Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.005
Recall1 : 0.14285714285714285
Precision2 : 0.0033333333333333335
Recall2 : 0.2
Precision3 : 0.0006574621959237344
Recall3 : 0.5
Average Precision:
Overall Precision3 : 0.003555204424254395
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0008766162612316459
Recall3 : 0.6666666666666666
Average Precision:
Overall Precision3 : 0.005925340707090658
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.01
Recall1 : 0.05714285714285714
Precision2 : 0.01
Recall2 : 0.15789473684210525
Precision3 : 0.0015340784571553803
Recall3 : 1.0
Average Precision:
Overall Precision3 : 0.012048192771084338
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.01
Recall1 : 0.4
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0008766162612316459
Recall3 : 1.0
Average Precision:

Overall Precision3 : 0.002567647639739285
Overall Recall3 : 1.0
==
Results:
Precision1 : 0.035
Recall1 : 0.12727272727272726
Precision2 : 0.013333333333333334
Recall2 : 0.0784313725490196
Precision3 : 0.004821389436774052
Recall3 : 0.8148148148148148
Average Precision:
Overall Precision3 : 0.026269010468101917
Overall Recall3 : 1.0
==
Results:
Precision1 : 0.01
Recall1 : 0.3333333333333333
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.00021915406530791147
Recall3 : 1.0
Average Precision:
Overall Precision3 : 0.0021726249259332413
Overall Recall3 : 1.0
==
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.01
Recall2 : 0.15789473684210525
Precision3 : 0.005917159763313609
Recall3 : 0.7714285714285715
Average Precision:
Overall Precision3 : 0.012048192771084338
Overall Recall3 : 1.0
==
Results:
Precision1 : 0.025
Recall1 : 0.12195121951219512
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.01051939513477975
Recall3 : 0.9795918367346939

Average Precision:
Overall Precision3 : 0.02034366976101126
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.00043830813061582295
Recall3 : 0.6666666666666666
Average Precision:
Overall Precision3 : 0.0015800908552241755
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.025
Recall1 : 0.12195121951219512
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.01051939513477975
Recall3 : 0.9795918367346939
Average Precision:
Overall Precision3 : 0.02034366976101126
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0008766162612316459
Recall3 : 0.6666666666666666
Average Precision:
Overall Precision3 : 0.0021726249259332413
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.02
Recall1 : 0.0784313725490196
Precision2 : 0.02666666666666667
Recall2 : 0.14545454545454545
Precision3 : 0.004821389436774052

Recall3 : 0.8148148148148148
Average Precision:
Overall Precision3 : 0.026269010468101917
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.005
Recall1 : 0.05263157894736842
Precision2 : 0.02
Recall2 : 0.17142857142857143
Precision3 : 0.0015340784571553803
Recall3 : 1.0
Average Precision:
Overall Precision3 : 0.012048192771084338
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.006666666666666667
Recall2 : 0.04878048780487805
Precision3 : 0.01051939513477975
Recall3 : 0.9795918367346939
Average Precision:
Overall Precision3 : 0.02034366976101126
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0006574621959237344
Recall3 : 1.0
Average Precision:
Overall Precision3 : 0.0015800908552241755
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.01
Recall1 : 0.15384615384615385
Precision2 : 0.0033333333333333335
Recall2 : 0.09090909090909091

Precision3 : 0.0008766162612316459
Recall3 : 0.6666666666666666
Average Precision:
Overall Precision3 : 0.005925340707090658
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.006666666666666667
Recall2 : 0.037037037037037035
Precision3 : 0.007012930089853167
Recall3 : 0.9696969696969697
Average Precision:
Overall Precision3 : 0.021923760616235435
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.005
Recall1 : 0.07692307692307693
Precision2 : 0.0
Recall2 : 0.0
Precision3 : 0.0017532325224632918
Recall3 : 0.6666666666666666
Average Precision:
Overall Precision3 : 0.00612285206399368
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.05
Recall1 : 0.08620689655172414
Precision2 : 0.02
Recall2 : 0.047244094488188976
Precision3 : 0.0210387902695595
Recall3 : 0.9142857142857143
Average Precision:
Overall Precision3 : 0.06873395220225163
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.025
Recall1 : 0.03937007874015748
Precision2 : 0.04

Recall2 : 0.10344827586206896
Precision3 : 0.0210387902695595
Recall3 : 0.9142857142857143
Average Precision:
Overall Precision3 : 0.06873395220225163
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.0033333333333333335
Recall2 : 0.2
Precision3 : 0.0008766162612316459
Recall3 : 1.0
Average Precision:
Overall Precision3 : 0.002567647639739285
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.013333333333333334
Recall2 : 0.0784313725490196
Precision3 : 0.008766162612316459
Recall3 : 0.7272727272727273
Average Precision:
Overall Precision3 : 0.026269010468101917
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.015
Recall1 : 0.25
Precision2 : 0.01
Recall2 : 0.23076923076923078
Precision3 : 0.0013149243918474688
Recall3 : 1.0
Average Precision:
Overall Precision3 : 0.00612285206399368
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0

Precision2 : 0.006666666666666667
Recall2 : 0.037037037037037035
Precision3 : 0.007012930089853167
Recall3 : 0.9696969696969697
Average Precision:
Overall Precision3 : 0.021923760616235435
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.0
Recall1 : 0.0
Precision2 : 0.0033333333333333335
Recall2 : 0.030303030303030304
Precision3 : 0.005040543502081963 4
Recall3 : 0.9583333333333334
Average Precision:
Overall Precision3 : 0.021923760616235435
Overall Recall3 : 1.0
==========
Results:
Precision1 : 0.05
Recall1 : 0.08620689655172414
Precision2 : 0.016666666666666666
Recall2 : 0.047619047619047616
Precision3 : 0.02542187157571773
Recall3 : 0.9133858267716536
Average Precision:
Overall Precision3 : 0.06873395220225163
Overall Recall3 : 1.0
==========

Part 2

Done in question1_2.py which saves blobs (x,y,sigma) in q2_feats

Part 3

Attempted but now done beyond the determinant of the hessian.