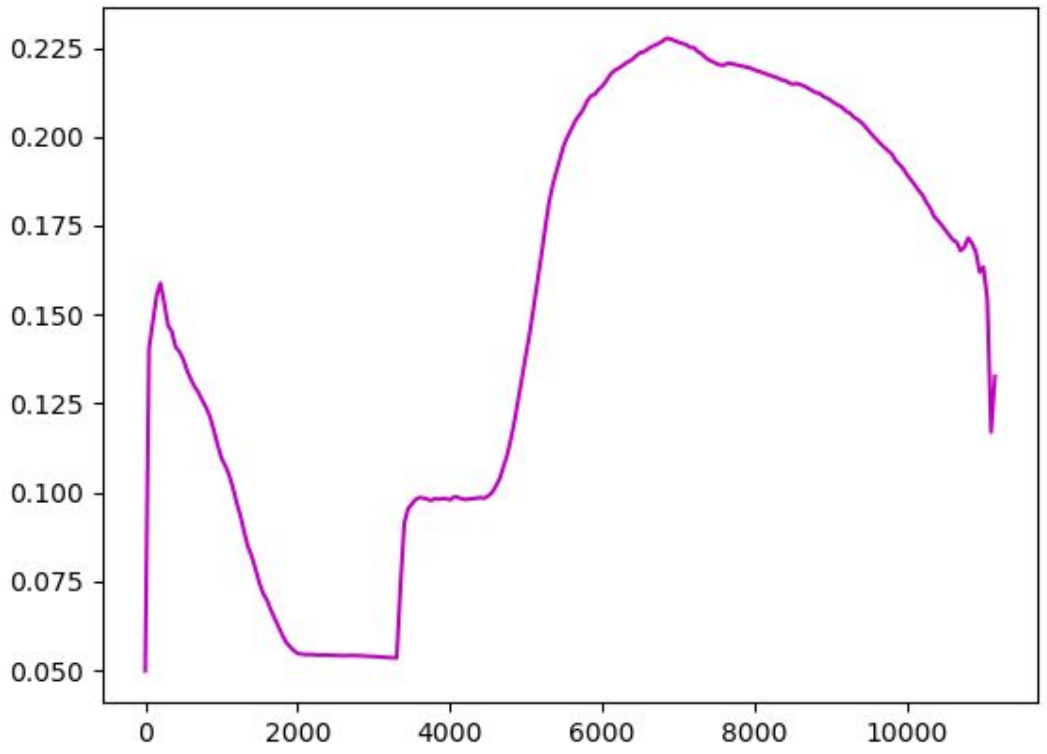
LOF.

$max\ \{k_dist,\ d(p,\ o)\}$

MAMMOGRAPHY

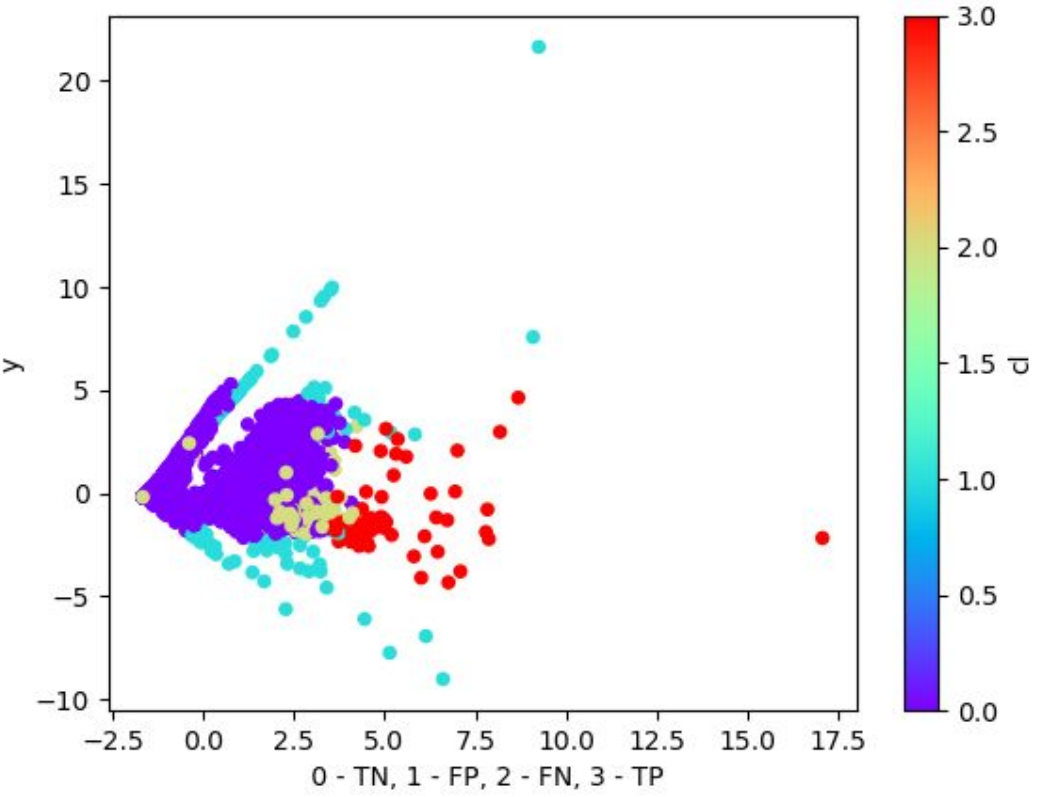
график AP(k):

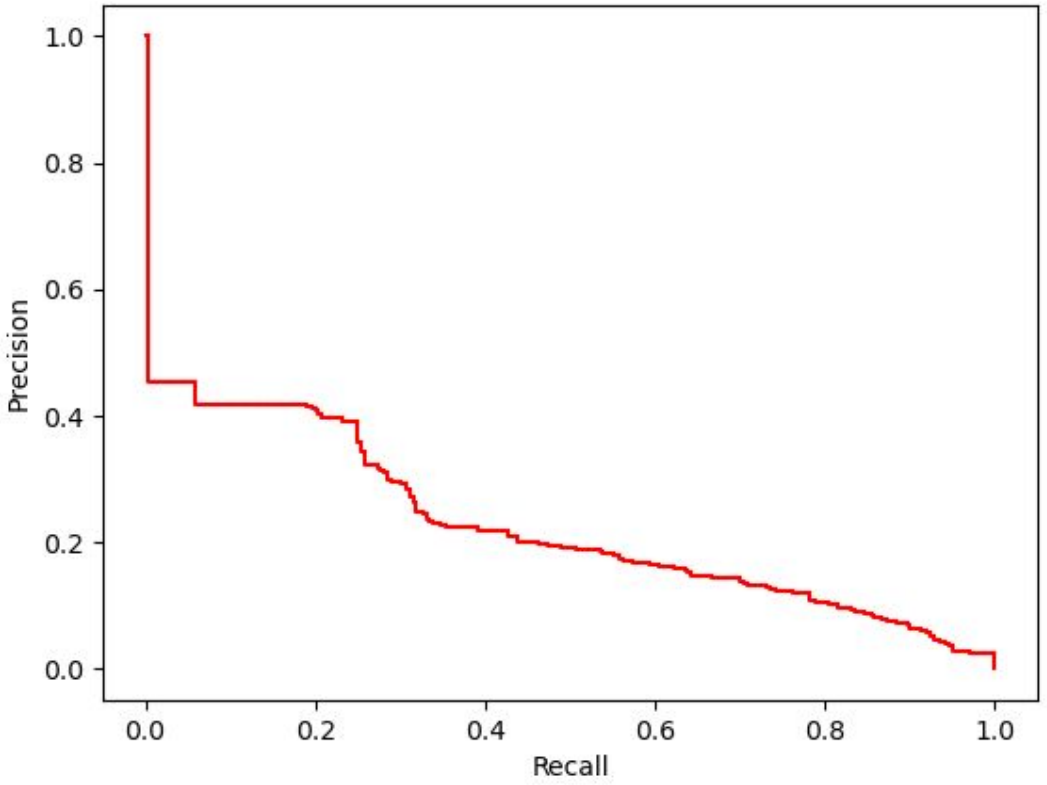


Max AP: 0.22761625846400002 k=6860 sklearn_AP:0.2127128721745572
TP=66 FP=118 FN=194 TN=10805
confusion matrix:
[[66 118]
[194 10805]]

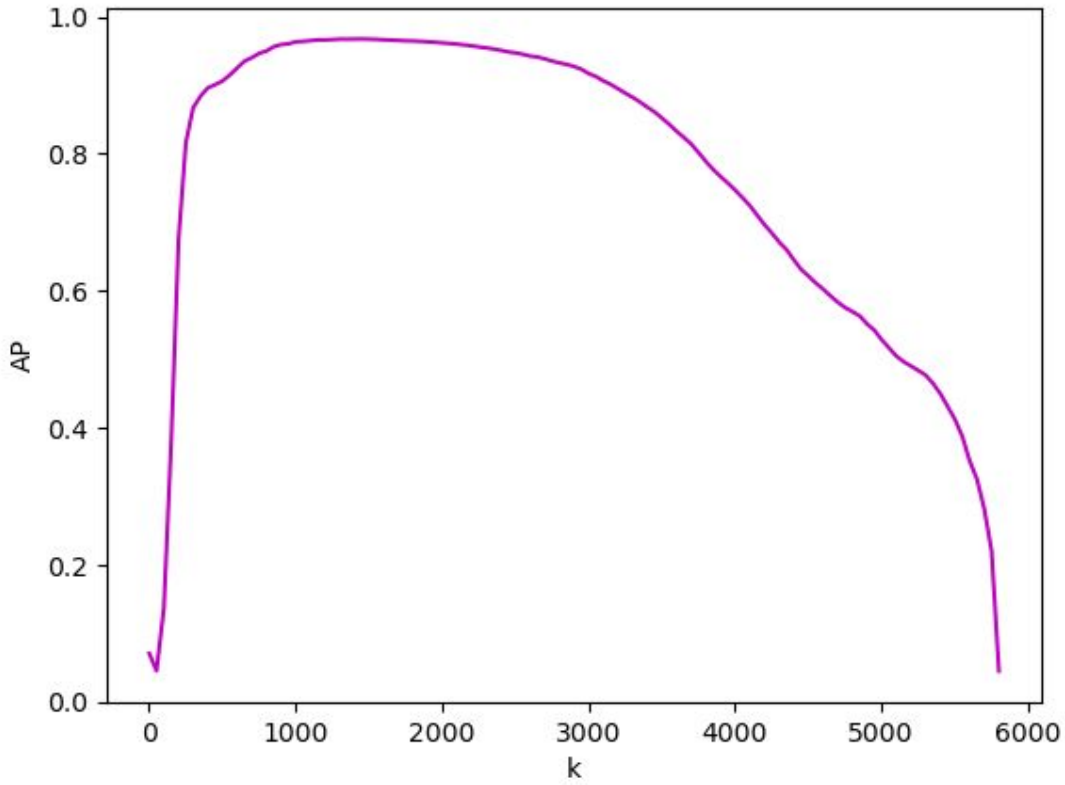
[[0.35869565 0.64130435]
[0.01763797 0.98236203]]

precision=0.358695652173913 recall=0.25384615384615383
result: k=6860, f1=0.3051643192488263, anomaly_edge=1.07282765852836


y
20
15
10
5
0
−5
−10
−2.5
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
0 - TN, 1 - FP, 2 - FN, 3 - TP
cl
3.0
2.5
2.0
1.5
1.0
0.5
0.0


Precision
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Recall

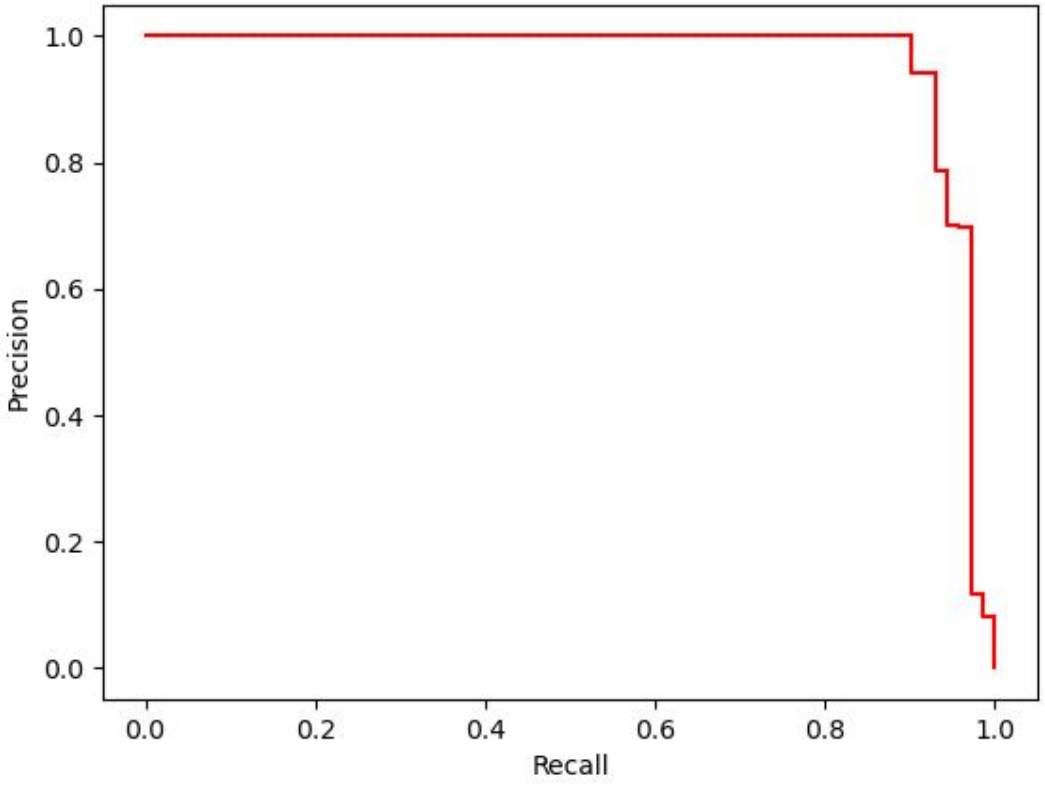
SAT.

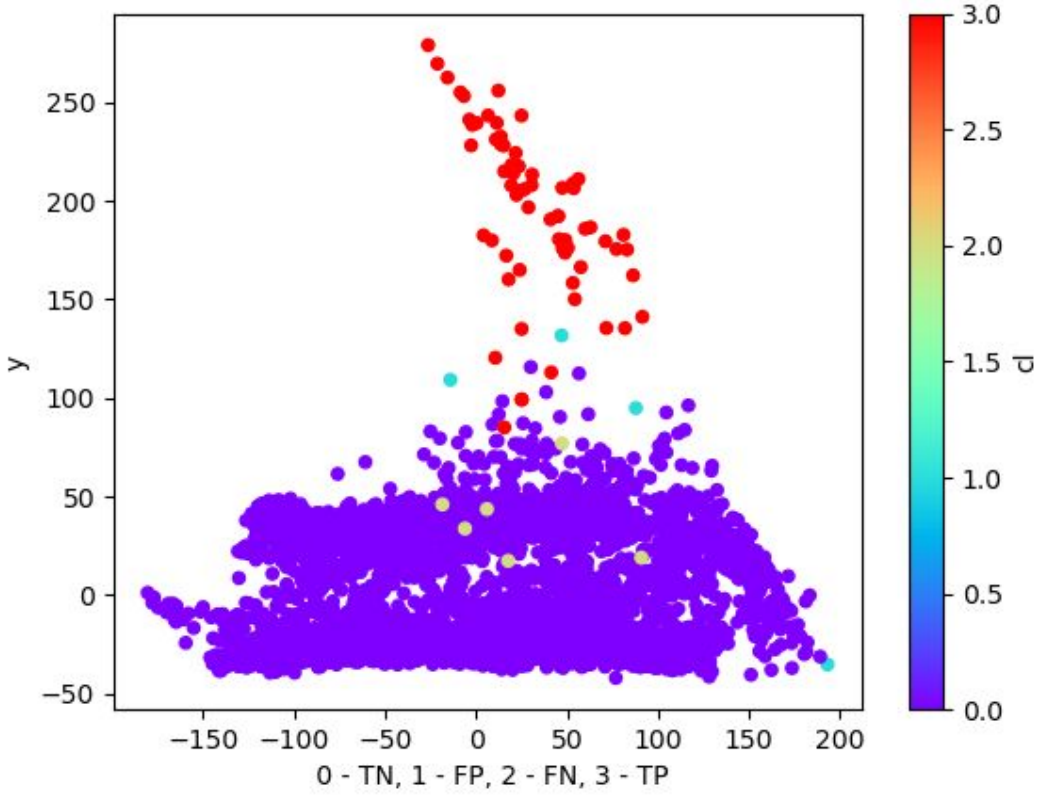


Max AP: 0.9680052022327751 k=1443 sklearn_AP:0.9615220607793293
TP=65 FP=4 FN=6 TN=5728
confusion matrix:
[[65 4]
 [6 5728]]

[[0.94202899 0.05797101]
 [0.00104639 0.99895361]]

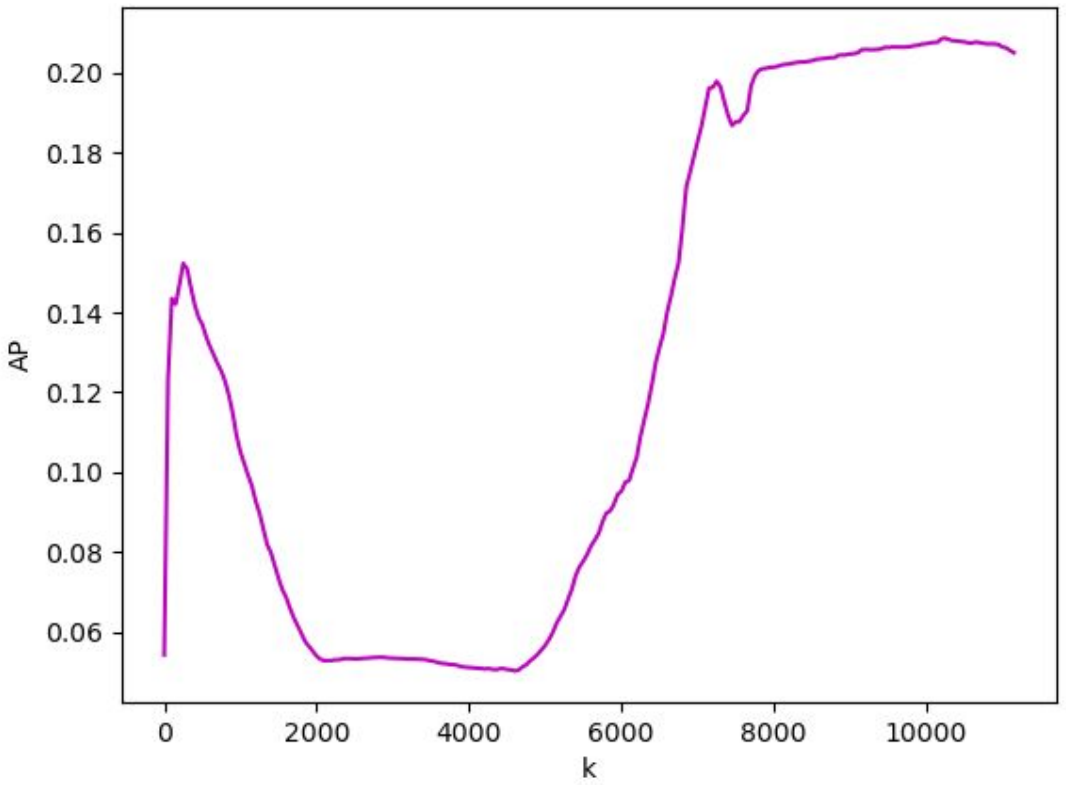
precision=0.9420289855072463 recall=0.9154929577464789
result: k=1443, f1=0.9481481481481481, anomaly_edge=0.8919413159237295


Precision
Recall
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0


y
0 - TN, 1 - FP, 2 - FN, 3 - TP
cl
250
200
150
100
50
0
−50
−150
−100
−50
0
50
100
150
200
3.0
2.5
2.0
1.5
1.0
0.5
0.0

$d(p,\ o)$

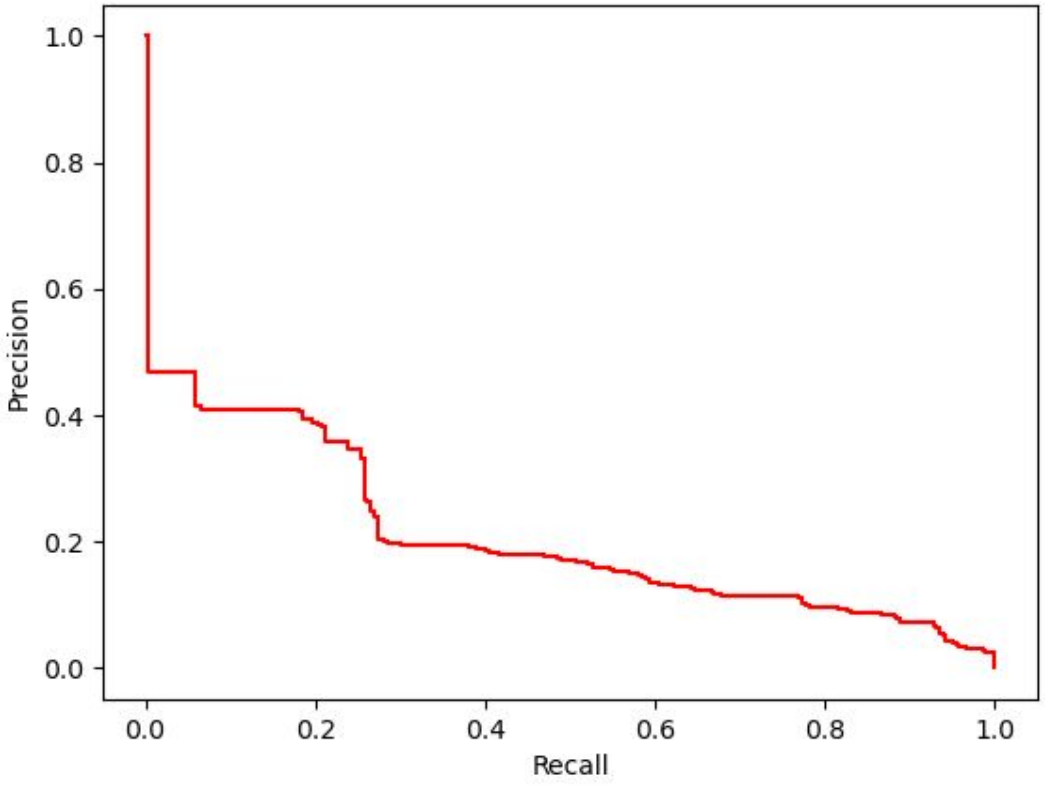
MAMMOGRAPHY

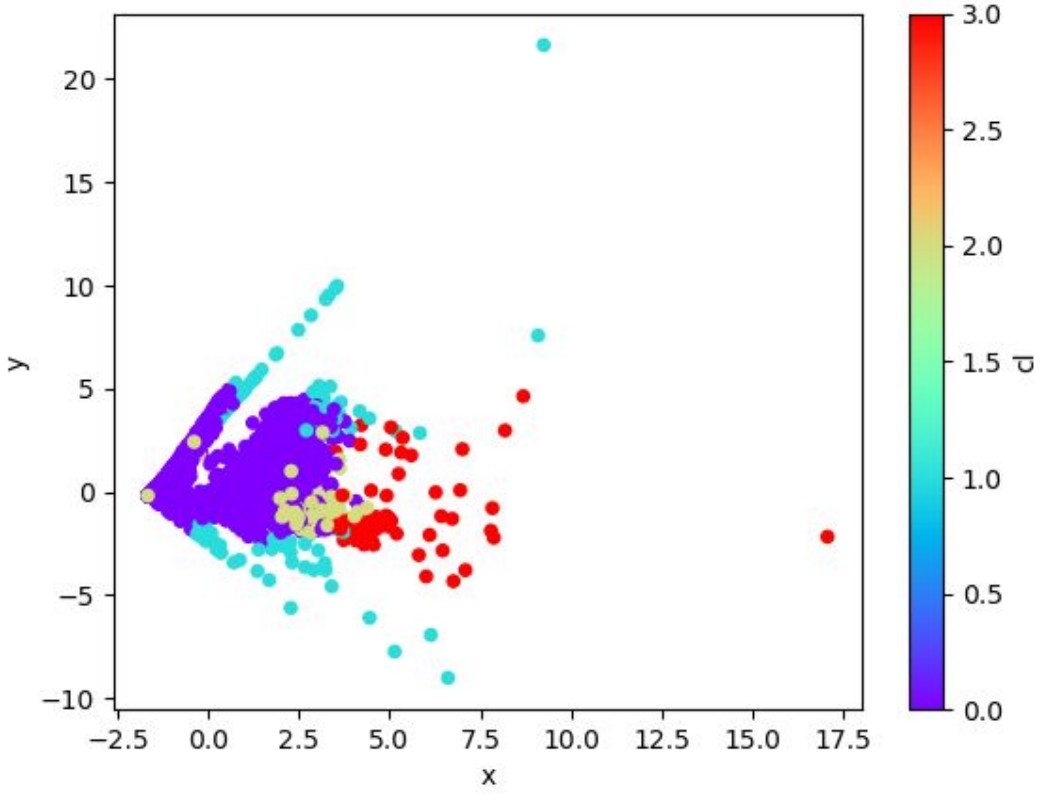


Max AP: 0.20721216319974914 k=10001 sklearn_AP:0.19295543238452834 TP=67 FP=138 FN=193 TN=10785
confusion matrix:
[[67 138]
[193 10785]]

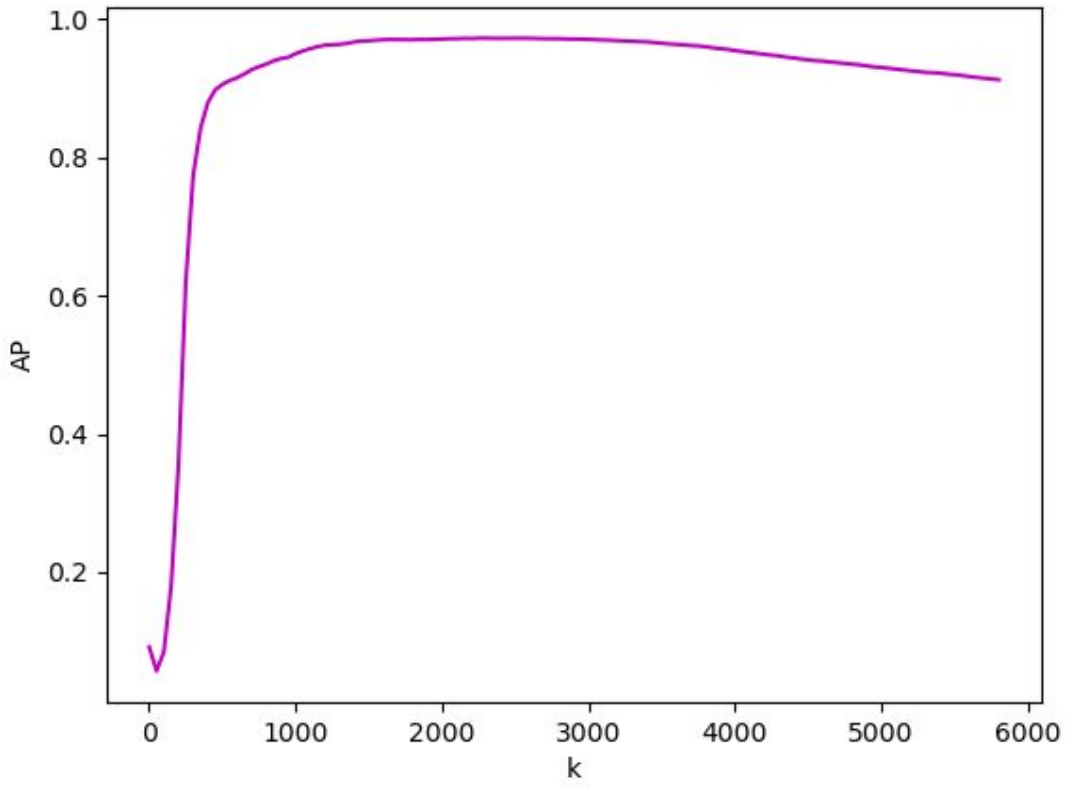
[[0.32682927 0.67317073]
[0.01758062 0.98241938]]

precision=0.32682926829268294 recall=0.25769230769230766
result: k=10001, f1=0.2926829268292683, anomaly_edge=1.69861645699888


Precision
Recall
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0


y
x
cl
20
15
10
5
0
−5
−10
−2.5
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0

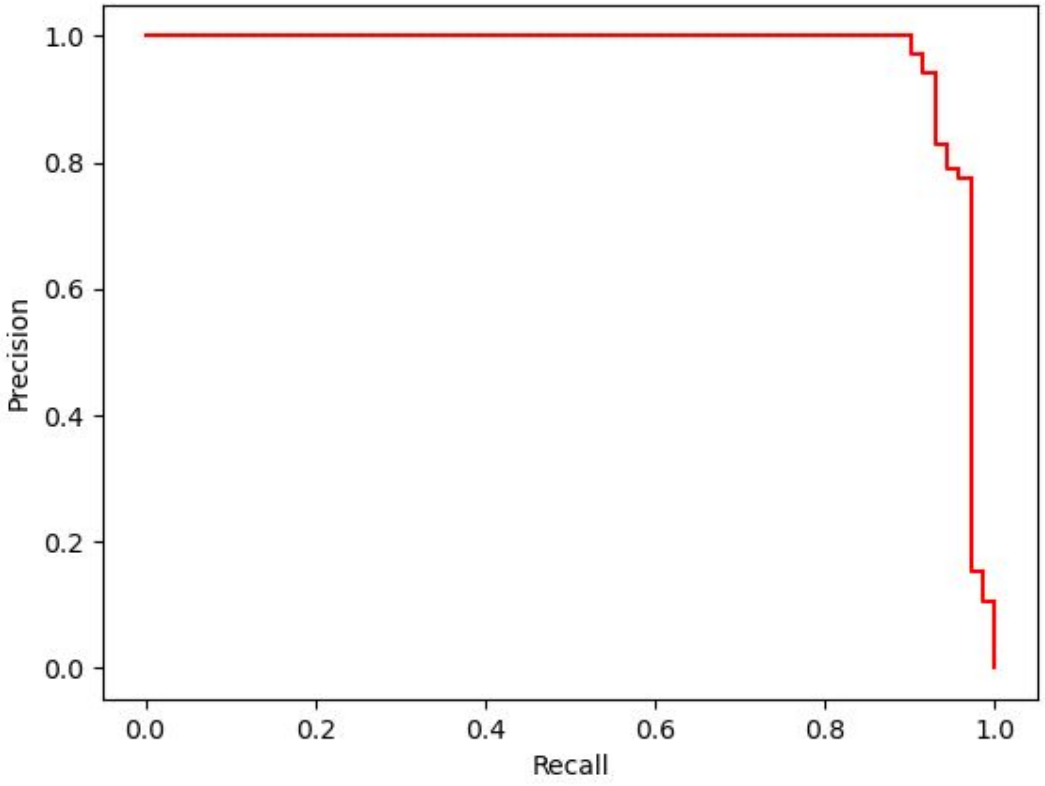
SAT

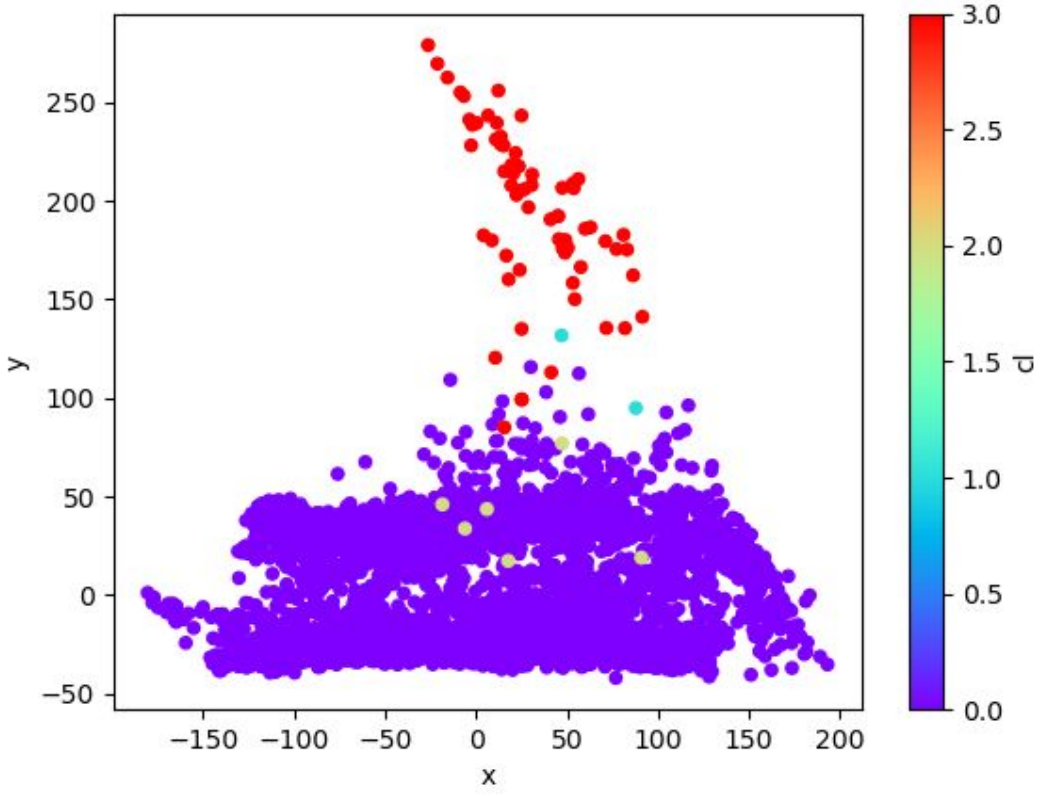


Max AP: 0.9719948730276143 k=2251 sklearn_AP:0.9656988881632039 iteration_time: 0.21695423126220703s
full time is 0.2169818878173828s. Time to 1 iteration is 3.7397774529021514e-05s
TP=65 FP=2 FN=6 TN=5730
confusion matrix:
[[65 2]
 [6 5730]]

[[0.97014925 0.02985075]
 [0.00104603 0.99895397]]

precision=0.9701492537313433 recall=0.9154929577464789
result: k=2251, f1=0.9481481481481481, anomaly_edge=1.0785695371512443


Precision
Recall
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0


y
x
cl
250
200
150
100
50
0
−50
−150
−100
−50
0
50
100
150
200
3.0
2.5
2.0
1.5
1.0
0.5
0.0