Format for statistics array: tp, tn, fp, fn, total % correct, total % incorrect, not exactly correct and out of threshold , average error if not exactly correct and within threshold

stats.add(tp);

stats.add(tn);

stats.add(fp);

stats.add(fn);

stats.add(totalCorrectClassifications / (double) errors.size()); //percent correct

stats.add(totalIncorrectClassifications / (double) errors.size()); //percent incorrect

stats.add(totalIncorrectOutOfThreshold / totalExactIncorrect); //percent incorrect out of threshold

stats.add(averageErrorIfWithinThreshold); //accurate name of variable

INSTRUCTIONS FOR USING NEW CODE:

To reproduce results below, the file BenPredictionTracker main function was used with the following code:

String[] aUserNames = {"16", "17", "18", "19", "20", "21", "22", "23", "24", "26", "27", "28", "29", "30", "31", "32", "33"};

for (String user : aUserNames) {

System.out.println(user + ": \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

String trainFile = "data/OutputDataAll/all\_testing\_" + user + ".arff";

String testFile = "data/OutputData/" + user + user + ".arff";

System.out.println("train file: " + trainFile + " test file: " + testFile);

BenPredictionTracker x = new BenPredictionTracker(trainFile, testFile, 180000, false, false);

List<PredictedInstance> predictions = x.evaluateTesting();

//System.out.println("IOU difficulty = " + x.calculateIOU(true));

//System.out.println("IOU not-difficulty = " + x.calculateIOU(false));

ArrayList<Double> stats = x.calculateErrorStats();

System.out.println(stats);

}

The important line to change for the different sets of 4 results below is:

Single points + within threshold as correct:

BenPredictionTracker x = new BenPredictionTracker(trainFile, testFile, 180000, false, true);

Single points + within threshold as incorrect:

BenPredictionTracker x = new BenPredictionTracker(trainFile, testFile, 180000, false, false);

Aggregate points + within threshold as correct:

BenPredictionTracker x = new BenPredictionTracker(trainFile, testFile, 180000, true, true);

Aggregate points + within threshold as incorrect:

BenPredictionTracker x = new BenPredictionTracker(trainFile, testFile, 180000, true, false);

In order to generate files for leave one out testing, use the file ABenArffGenerator and run as a normal arffgenerator however first call:

arffGenerator.setModifyPredictionsByTreshold(true);

This function will use thresholding to change ground truths.

TEST DATA::

Used by calling the setTestMode function prior to running analysis.

Test data size=10:

Ground truth: 0,0,0,1,1,1,0,0,1,1

Predictions: 0,0,1,0,1,1,0,0,1,0

Timings: 0, 200000, 400000, 550000, 800000, 1000000, 1200000, 1400000, 1600000, 1800000

Test data singular counting within threshold as correct:

tn fp tn fn: 3.0 0.0 5.0 2.0

total pos: 5.0 total neg: 5.0

[0.6, 1.0, 0.0, 0.4, 0.8, 0.2, 0.6666666666666666, 150000.0]

Test data singular counting within threshold as incorrect:

tn fp tn fn: 3.0 1.0 4.0 2.0

total pos: 5.0 total neg: 5.0

[0.6, 0.8, 0.2, 0.4, 0.7, 0.3, 0.6666666666666666, 150000.0]

Test data aggregate counting within threshold as correct:

Aggregate accuracy:

0.5

tn fp tn fn: 1.0 0.0 1.0 0.0

total pos: 1.0 total neg: 1.0

[1.0, 1.0, 0.0, 0.0, 1.0, 0.0, NaN, NaN]

Test data aggregate counting within threshold as incorrect:

Aggregate accuracy:

0.5

tn fp tn fn: 1.0 0.0 1.0 0.0

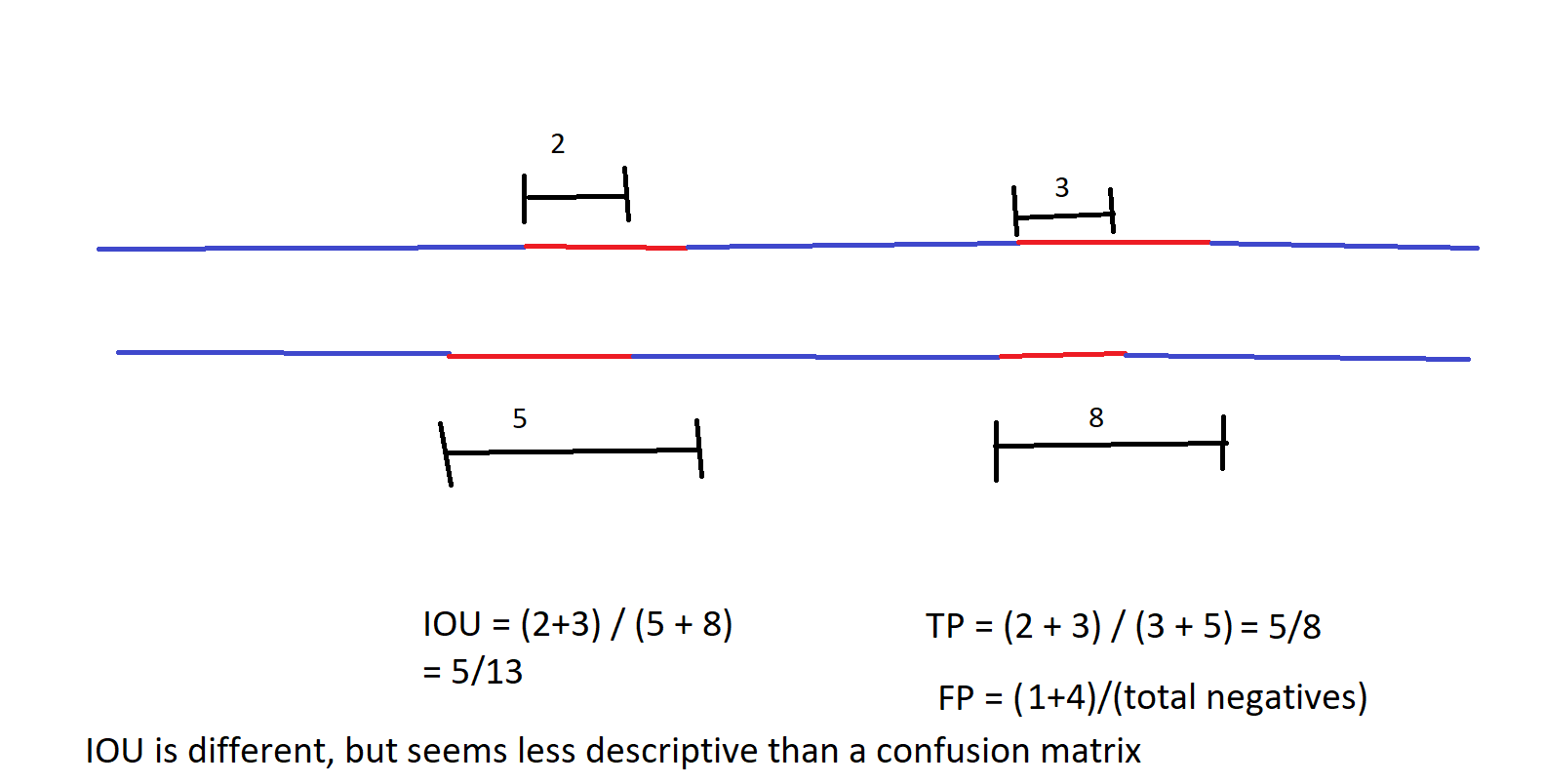
total pos: 1.0 total neg: 1.0

[1.0, 1.0, 0.0, 0.0, 1.0, 0.0, NaN, NaN]

IOU ISSUES:

Iou has issues in this setting due to the main following reasons:

* We are predicting many events at a time (many points of difficulty per participant, rather than just one
* We are dealing with discrete points in time rather than continuous regions
* Our predictions are made for individual points of difficulty, not ranges
* In this case, a traditional use of IOU simply gives the accuracy of difficulty predictions as shown in the image below



**RESULTS FROM COUNTING WITHIN THRESHOLD AS CORRECT:**

16: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_16.arff test file: data/OutputData/1616.arff

tn fp tn fn: 4221.0 0.0 911.0 114.0

total pos: 4335.0 total neg: 911.0

[0.9737024221453288, 1.0, 0.0, 0.02629757785467128, 0.9782691574532978, 0.02173084254670225, 0.11187438665358194, 104782.41325966851]

17: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_17.arff test file: data/OutputData/1717.arff

tn fp tn fn: 942.0 142.0 22.0 44.0

total pos: 986.0 total neg: 164.0

[0.9553752535496958, 0.13414634146341464, 0.8658536585365854, 0.04462474645030426, 0.8382608695652174, 0.1617391304347826, 0.8899521531100478, 120059.82608695653]

18: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_18.arff test file: data/OutputData/1818.arff

tn fp tn fn: 4367.0 0.0 6.0 111.0

total pos: 4478.0 total neg: 6.0

[0.9752121482804823, 1.0, 0.0, 0.024787851719517643, 0.9752453166815344, 0.024754683318465656, 0.940677966101695, 44218.57142857143]

19: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_19.arff test file: data/OutputData/1919.arff

tn fp tn fn: 5371.0 0.0 5.0 281.0

total pos: 5652.0 total neg: 5.0

[0.9502830856334041, 1.0, 0.0, 0.049716914366595893, 0.9503270284603147, 0.04967297153968535, 0.7656675749318801, 103464.94186046511]

20: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_20.arff test file: data/OutputData/2020.arff

tn fp tn fn: 4816.0 0.0 2.0 268.0

total pos: 5084.0 total neg: 2.0

[0.9472856018882769, 1.0, 0.0, 0.05271439811172305, 0.9473063311049941, 0.0526936688950059, 0.8933333333333333, 123807.3125]

21: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_21.arff test file: data/OutputData/2121.arff

tn fp tn fn: 3679.0 0.0 6.0 271.0

total pos: 3950.0 total neg: 6.0

[0.9313924050632911, 1.0, 0.0, 0.06860759493670886, 0.9314964610717897, 0.06850353892821032, 0.954225352112676, 38820.61538461538]

22: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_22.arff test file: data/OutputData/2222.arff

tn fp tn fn: 6260.0 41.0 1513.0 210.0

total pos: 6470.0 total neg: 1554.0

[0.9675425038639877, 0.9736164736164736, 0.026383526383526385, 0.03245749613601236, 0.9687188434695913, 0.03128115653040878, 0.1424517593643587, 95496.75380542687]

23: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_23.arff test file: data/OutputData/2323.arff

tn fp tn fn: 3086.0 0.0 3.0 155.0

total pos: 3241.0 total neg: 3.0

[0.9521752545510644, 1.0, 0.0, 0.047824745448935516, 0.9522194821208385, 0.04778051787916153, 0.9810126582278481, 11364.333333333334]

24: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_24.arff test file: data/OutputData/2424.arff

tn fp tn fn: 5128.0 0.0 4.0 386.0

total pos: 5514.0 total neg: 4.0

[0.9299963728690606, 1.0, 0.0, 0.07000362713093942, 0.9300471185212034, 0.06995288147879666, 0.9507389162561576, 81359.8]

26: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_26.arff test file: data/OutputData/2626.arff

tn fp tn fn: 4333.0 0.0 7.0 110.0

total pos: 4443.0 total neg: 7.0

[0.9752419536349314, 1.0, 0.0, 0.024758046365068648, 0.9752808988764045, 0.024719101123595506, 0.8870967741935484, 65490.28571428572]

27: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_27.arff test file: data/OutputData/2727.arff

tn fp tn fn: 5384.0 291.0 570.0 283.0

total pos: 5667.0 total neg: 861.0

[0.9500617610728781, 0.662020905923345, 0.33797909407665505, 0.04993823892712193, 0.9120710784313726, 0.08792892156862746, 0.4839797639123103, 91892.12418300654]

28: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_28.arff test file: data/OutputData/2828.arff

tn fp tn fn: 4986.0 247.0 1220.0 215.0

total pos: 5201.0 total neg: 1467.0

[0.9586617958084984, 0.8316291751874574, 0.1683708248125426, 0.04133820419150164, 0.9307138572285543, 0.06928614277144571, 0.27483640690065436, 79669.66283839212]

29: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_29.arff test file: data/OutputData/2929.arff

tn fp tn fn: 1599.0 1979.0 929.0 197.0

total pos: 1796.0 total neg: 2908.0

[0.8903118040089086, 0.3194635488308116, 0.6805364511691885, 0.10968819599109131, 0.5374149659863946, 0.46258503401360546, 0.7094880991196609, 111371.90123456791]

30: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_30.arff test file: data/OutputData/3030.arff

tn fp tn fn: 5827.0 0.0 19.0 209.0

total pos: 6036.0 total neg: 19.0

[0.9653744201457919, 1.0, 0.0, 0.03462557985420808, 0.9654830718414533, 0.03451692815854666, 0.9166666666666666, 80025.21052631579]

31: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_31.arff test file: data/OutputData/3131.arff

tn fp tn fn: 2741.0 124.0 303.0 33.0

total pos: 2774.0 total neg: 427.0

[0.9881038211968277, 0.7096018735362998, 0.2903981264637002, 0.011896178803172314, 0.950952827241487, 0.04904717275851297, 0.34505494505494505, 106651.1744966443]

32: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_32.arff test file: data/OutputData/3232.arff

tn fp tn fn: 188.0 0.0 10.0 0.0

total pos: 188.0 total neg: 10.0

[1.0, 1.0, 0.0, 0.0, 1.0, 0.0, 0.0, 106173.41666666667]

33: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_33.arff test file: data/OutputData/3333.arff

tn fp tn fn: 1348.0 0.0 0.0 457.0

total pos: 1805.0 total neg: 0.0

[0.746814404432133, NaN, NaN, 0.253185595567867, 0.746814404432133, 0.253185595567867, 1.0, NaN]

**RESULTS COUNTING WITHIN THRESHOLD STILL AS INCORRECT:**

16: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_16.arff test file: data/OutputData/1616.arff

tn fp tn fn: 4182.0 866.0 45.0 153.0

total pos: 4335.0 total neg: 911.0

[0.9647058823529412, 0.04939626783754116, 0.9506037321624589, 0.03529411764705882, 0.8057567670606176, 0.1942432329393824, 1.0, Infinity]

17: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_17.arff test file: data/OutputData/1717.arff

tn fp tn fn: 929.0 152.0 12.0 57.0

total pos: 986.0 total neg: 164.0

[0.9421906693711968, 0.07317073170731707, 0.926829268292683, 0.057809330628803245, 0.8182608695652174, 0.1817391304347826, 1.0, Infinity]

18: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_18.arff test file: data/OutputData/1818.arff

tn fp tn fn: 4366.0 6.0 0.0 112.0

total pos: 4478.0 total neg: 6.0

[0.9749888343010272, 0.0, 1.0, 0.025011165698972757, 0.9736842105263158, 0.02631578947368421, 1.0, Infinity]

19: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_19.arff test file: data/OutputData/1919.arff

tn fp tn fn: 5290.0 5.0 0.0 362.0

total pos: 5652.0 total neg: 5.0

[0.9359518754423213, 0.0, 1.0, 0.06404812455767869, 0.935124624359201, 0.06487537564079901, 1.0, Infinity]

20: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_20.arff test file: data/OutputData/2020.arff

tn fp tn fn: 4786.0 2.0 0.0 298.0

total pos: 5084.0 total neg: 2.0

[0.9413847364280095, 0.0, 1.0, 0.05861526357199056, 0.9410145497443964, 0.058985450255603616, 1.0, Infinity]

21: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_21.arff test file: data/OutputData/2121.arff

tn fp tn fn: 3672.0 6.0 0.0 278.0

total pos: 3950.0 total neg: 6.0

[0.929620253164557, 0.0, 1.0, 0.07037974683544304, 0.9282103134479271, 0.0717896865520728, 1.0, Infinity]

22: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_22.arff test file: data/OutputData/2222.arff

tn fp tn fn: 6141.0 1433.0 121.0 329.0

total pos: 6470.0 total neg: 1554.0

[0.9491499227202473, 0.07786357786357787, 0.9221364221364221, 0.05085007727975271, 0.7804087736789631, 0.2195912263210369, 1.0, Infinity]

23: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_23.arff test file: data/OutputData/2323.arff

tn fp tn fn: 3086.0 3.0 0.0 155.0

total pos: 3241.0 total neg: 3.0

[0.9521752545510644, 0.0, 1.0, 0.047824745448935516, 0.9512946979038225, 0.04870530209617756, 1.0, Infinity]

24: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_24.arff test file: data/OutputData/2424.arff

tn fp tn fn: 5111.0 3.0 1.0 403.0

total pos: 5514.0 total neg: 4.0

[0.9269133115705477, 0.25, 0.75, 0.0730866884294523, 0.9264226168901776, 0.0735773831098224, 1.0, Infinity]

26: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_26.arff test file: data/OutputData/2626.arff

tn fp tn fn: 4326.0 7.0 0.0 117.0

total pos: 4443.0 total neg: 7.0

[0.9736664415935179, 0.0, 1.0, 0.02633355840648211, 0.9721348314606741, 0.027865168539325844, 1.0, Infinity]

27: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_27.arff test file: data/OutputData/2727.arff

tn fp tn fn: 5294.0 813.0 48.0 373.0

total pos: 5667.0 total neg: 861.0

[0.934180342332804, 0.05574912891986063, 0.9442508710801394, 0.06581965766719605, 0.8183210784313726, 0.18167892156862744, 1.0, Infinity]

28: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_28.arff test file: data/OutputData/2828.arff

tn fp tn fn: 4925.0 1405.0 62.0 276.0

total pos: 5201.0 total neg: 1467.0

[0.9469332820611421, 0.04226312201772325, 0.9577368779822768, 0.053066717938857914, 0.7479004199160167, 0.2520995800839832, 1.0, Infinity]

29: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_29.arff test file: data/OutputData/2929.arff

tn fp tn fn: 1564.0 2835.0 73.0 232.0

total pos: 1796.0 total neg: 2908.0

[0.8708240534521158, 0.025103163686382393, 0.9748968363136176, 0.1291759465478842, 0.3480017006802721, 0.6519982993197279, 1.0, Infinity]

30: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_30.arff test file: data/OutputData/3030.arff

tn fp tn fn: 5827.0 19.0 0.0 209.0

total pos: 6036.0 total neg: 19.0

[0.9653744201457919, 0.0, 1.0, 0.03462557985420808, 0.9623451692815854, 0.037654830718414536, 1.0, Infinity]

31: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_31.arff test file: data/OutputData/3131.arff

tn fp tn fn: 2740.0 421.0 6.0 34.0

total pos: 2774.0 total neg: 427.0

[0.9877433309300648, 0.01405152224824356, 0.9859484777517564, 0.012256669069935111, 0.8578569197125898, 0.14214308028741018, 1.0, Infinity]

32: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_32.arff test file: data/OutputData/3232.arff

tn fp tn fn: 186.0 10.0 0.0 2.0

total pos: 188.0 total neg: 10.0

[0.9893617021276596, 0.0, 1.0, 0.010638297872340425, 0.9393939393939394, 0.06060606060606061, 1.0, Infinity]

33: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_33.arff test file: data/OutputData/3333.arff

tn fp tn fn: 1348.0 0.0 0.0 457.0

total pos: 1805.0 total neg: 0.0

[0.746814404432133, NaN, NaN, 0.253185595567867, 0.746814404432133, 0.253185595567867, 1.0, NaN]

**AGGREGATE RESULTS COUNTING WITHIN THRESHOLD AS CORRECT:**

16: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_16.arff test file: data/OutputData/1616.arff

Aggregate accuracy:

0.8074356530028599

tp fp tn fn: 839.0 172.0 10.0 28.0

total pos: 867.0 total neg: 182.0

[0.9677047289504037, 0.054945054945054944, 0.945054945054945, 0.03229527104959631, 0.8093422306959008, 0.19065776930409914, 0.9900990099009901, 47276.0]

17: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_17.arff test file: data/OutputData/1717.arff

Aggregate accuracy:

0.8304347826086956

tn fp tn fn: 189.0 29.0 4.0 8.0

total pos: 197.0 total neg: 33.0

[0.9593908629441624, 0.12121212121212122, 0.8787878787878788, 0.04060913705583756, 0.8391304347826087, 0.1608695652173913, 0.9487179487179487, 52174.5]

18: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_18.arff test file: data/OutputData/1818.arff

Aggregate accuracy:

0.9821428571428571

tn fp tn fn: 880.0 0.0 0.0 16.0

total pos: 896.0 total neg: 0.0

[0.9821428571428571, NaN, NaN, 0.017857142857142856, 0.9821428571428571, 0.017857142857142856, 1.0, NaN]

19: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_19.arff test file: data/OutputData/1919.arff

Aggregate accuracy:

0.9407603890362511

tn fp tn fn: 1064.0 0.0 0.0 67.0

total pos: 1131.0 total neg: 0.0

[0.9407603890362511, NaN, NaN, 0.0592396109637489, 0.9407603890362511, 0.0592396109637489, 1.0, NaN]

20: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_20.arff test file: data/OutputData/2020.arff

Aggregate accuracy:

0.9587020648967551

tn fp tn fn: 975.0 0.0 0.0 42.0

total pos: 1017.0 total neg: 0.0

[0.9587020648967551, NaN, NaN, 0.04129793510324484, 0.9587020648967551, 0.04129793510324484, 1.0, NaN]

21: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_21.arff test file: data/OutputData/2121.arff

Aggregate accuracy:

0.943109987357775

tn fp tn fn: 746.0 0.0 0.0 45.0

total pos: 791.0 total neg: 0.0

[0.943109987357775, NaN, NaN, 0.056890012642225034, 0.943109987357775, 0.056890012642225034, 1.0, NaN]

22: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_22.arff test file: data/OutputData/2222.arff

Aggregate accuracy:

0.7874064837905237

tn fp tn fn: 1239.0 283.0 27.0 55.0

total pos: 1294.0 total neg: 310.0

[0.9574961360123647, 0.08709677419354839, 0.9129032258064517, 0.04250386398763524, 0.7892768079800498, 0.21072319201995013, 0.9912023460410557, 6318.666666666667]

23: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_23.arff test file: data/OutputData/2323.arff

Aggregate accuracy:

0.9521604938271605

tn fp tn fn: 617.0 0.0 0.0 31.0

total pos: 648.0 total neg: 0.0

[0.9521604938271605, NaN, NaN, 0.047839506172839504, 0.9521604938271605, 0.047839506172839504, 1.0, NaN]

24: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_24.arff test file: data/OutputData/2424.arff

Aggregate accuracy:

0.9410698096101541

tn fp tn fn: 1039.0 0.0 0.0 64.0

total pos: 1103.0 total neg: 0.0

[0.9419764279238441, NaN, NaN, 0.05802357207615594, 0.9419764279238441, 0.05802357207615594, 0.9846153846153847, 332.0]

26: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_26.arff test file: data/OutputData/2626.arff

Aggregate accuracy:

0.9820224719101124

tn fp tn fn: 874.0 0.0 0.0 16.0

total pos: 890.0 total neg: 0.0

[0.9820224719101124, NaN, NaN, 0.017977528089887642, 0.9820224719101124, 0.017977528089887642, 1.0, NaN]

27: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_27.arff test file: data/OutputData/2727.arff

Aggregate accuracy:

0.8222222222222222

tn fp tn fn: 1064.0 159.0 12.0 70.0

total pos: 1134.0 total neg: 171.0

[0.9382716049382716, 0.07017543859649122, 0.9298245614035088, 0.06172839506172839, 0.8245210727969349, 0.17547892720306513, 0.9870689655172413, 8259.333333333334]

28: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_28.arff test file: data/OutputData/2828.arff

Aggregate accuracy:

0.7569392348087022

tn fp tn fn: 998.0 280.0 11.0 44.0

total pos: 1042.0 total neg: 291.0

[0.9577735124760077, 0.037800687285223365, 0.9621993127147767, 0.04222648752399232, 0.7569392348087022, 0.24306076519129782, 1.0, NaN]

29: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_29.arff test file: data/OutputData/2929.arff

Aggregate accuracy:

0.35

tn fp tn fn: 317.0 566.0 14.0 43.0

total pos: 360.0 total neg: 580.0

[0.8805555555555555, 0.02413793103448276, 0.9758620689655172, 0.11944444444444445, 0.35212765957446807, 0.6478723404255319, 0.9967266775777414, 42366.0]

30: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_30.arff test file: data/OutputData/3030.arff

Aggregate accuracy:

0.9694467382328654

tn fp tn fn: 1174.0 4.0 0.0 33.0

total pos: 1207.0 total neg: 4.0

[0.9726594863297432, 0.0, 1.0, 0.027340513670256836, 0.9694467382328654, 0.0305532617671346, 1.0, NaN]

31: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_31.arff test file: data/OutputData/3131.arff

Aggregate accuracy:

0.8625

tn fp tn fn: 551.0 83.0 3.0 3.0

total pos: 554.0 total neg: 86.0

[0.9945848375451264, 0.03488372093023256, 0.9651162790697675, 0.005415162454873646, 0.865625, 0.134375, 0.9772727272727273, 12298.0]

32: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_32.arff test file: data/OutputData/3232.arff

Aggregate accuracy:

0.9487179487179487

tn fp tn fn: 37.0 1.0 1.0 0.0

total pos: 37.0 total neg: 2.0

[1.0, 0.5, 0.5, 0.0, 0.9743589743589743, 0.02564102564102564, 0.5, 63434.0]

33: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_33.arff test file: data/OutputData/3333.arff

Aggregate accuracy:

0.7590027700831025

tn fp tn fn: 274.0 0.0 0.0 87.0

total pos: 361.0 total neg: 0.0

[0.7590027700831025, NaN, NaN, 0.2409972299168975, 0.7590027700831025, 0.2409972299168975, 1.0, NaN]

**AGGREGATE RESULTS NOT COUNTING WITHIN THRESHOLD AS CORRECT**

16: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_16.arff test file: data/OutputData/1616.arff

Aggregate accuracy:

0.8074356530028599

tn fp tn fn: 839.0 174.0 8.0 28.0

total pos: 867.0 total neg: 182.0

[0.9677047289504037, 0.04395604395604396, 0.9560439560439561, 0.03229527104959631, 0.8074356530028599, 0.19256434699714015, 1.0, Infinity]

17: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_17.arff test file: data/OutputData/1717.arff

Aggregate accuracy:

0.8304347826086956

tn fp tn fn: 189.0 31.0 2.0 8.0

total pos: 197.0 total neg: 33.0

[0.9593908629441624, 0.06060606060606061, 0.9393939393939394, 0.04060913705583756, 0.8304347826086956, 0.16956521739130434, 1.0, Infinity]

18: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_18.arff test file: data/OutputData/1818.arff

Aggregate accuracy:

0.9821428571428571

tn fp tn fn: 880.0 0.0 0.0 16.0

total pos: 896.0 total neg: 0.0

[0.9821428571428571, NaN, NaN, 0.017857142857142856, 0.9821428571428571, 0.017857142857142856, 1.0, NaN]

19: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_19.arff test file: data/OutputData/1919.arff

Aggregate accuracy:

0.9407603890362511

tn fp tn fn: 1064.0 0.0 0.0 67.0

total pos: 1131.0 total neg: 0.0

[0.9407603890362511, NaN, NaN, 0.0592396109637489, 0.9407603890362511, 0.0592396109637489, 1.0, NaN]

20: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_20.arff test file: data/OutputData/2020.arff

Aggregate accuracy:

0.9587020648967551

tn fp tn fn: 975.0 0.0 0.0 42.0

total pos: 1017.0 total neg: 0.0

[0.9587020648967551, NaN, NaN, 0.04129793510324484, 0.9587020648967551, 0.04129793510324484, 1.0, NaN]

21: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_21.arff test file: data/OutputData/2121.arff

Aggregate accuracy:

0.943109987357775

tn fp tn fn: 746.0 0.0 0.0 45.0

total pos: 791.0 total neg: 0.0

[0.943109987357775, NaN, NaN, 0.056890012642225034, 0.943109987357775, 0.056890012642225034, 1.0, NaN]

22: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_22.arff test file: data/OutputData/2222.arff

Aggregate accuracy:

0.7874064837905237

tn fp tn fn: 1239.0 286.0 24.0 55.0

total pos: 1294.0 total neg: 310.0

[0.9574961360123647, 0.07741935483870968, 0.9225806451612903, 0.04250386398763524, 0.7874064837905237, 0.2125935162094763, 1.0, Infinity]

23: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_23.arff test file: data/OutputData/2323.arff

Aggregate accuracy:

0.9521604938271605

tn fp tn fn: 617.0 0.0 0.0 31.0

total pos: 648.0 total neg: 0.0

[0.9521604938271605, NaN, NaN, 0.047839506172839504, 0.9521604938271605, 0.047839506172839504, 1.0, NaN]

24: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_24.arff test file: data/OutputData/2424.arff

Aggregate accuracy:

0.9410698096101541

tn fp tn fn: 1038.0 0.0 0.0 65.0

total pos: 1103.0 total neg: 0.0

[0.9410698096101541, NaN, NaN, 0.05893019038984588, 0.9410698096101541, 0.05893019038984588, 1.0, Infinity]

26: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_26.arff test file: data/OutputData/2626.arff

Aggregate accuracy:

0.9820224719101124

tn fp tn fn: 874.0 0.0 0.0 16.0

total pos: 890.0 total neg: 0.0

[0.9820224719101124, NaN, NaN, 0.017977528089887642, 0.9820224719101124, 0.017977528089887642, 1.0, NaN]

27: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_27.arff test file: data/OutputData/2727.arff

Aggregate accuracy:

0.8222222222222222

tn fp tn fn: 1064.0 162.0 9.0 70.0

total pos: 1134.0 total neg: 171.0

[0.9382716049382716, 0.05263157894736842, 0.9473684210526315, 0.06172839506172839, 0.8222222222222222, 0.17777777777777778, 1.0, Infinity]

28: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_28.arff test file: data/OutputData/2828.arff

Aggregate accuracy:

0.7569392348087022

tn fp tn fn: 998.0 280.0 11.0 44.0

total pos: 1042.0 total neg: 291.0

[0.9577735124760077, 0.037800687285223365, 0.9621993127147767, 0.04222648752399232, 0.7569392348087022, 0.24306076519129782, 1.0, NaN]

29: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_29.arff test file: data/OutputData/2929.arff

Aggregate accuracy:

0.35

tn fp tn fn: 317.0 568.0 12.0 43.0

total pos: 360.0 total neg: 580.0

[0.8805555555555555, 0.020689655172413793, 0.9793103448275862, 0.11944444444444445, 0.35, 0.65, 1.0, Infinity]

30: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_30.arff test file: data/OutputData/3030.arff

Aggregate accuracy:

0.9694467382328654

tn fp tn fn: 1174.0 4.0 0.0 33.0

total pos: 1207.0 total neg: 4.0

[0.9726594863297432, 0.0, 1.0, 0.027340513670256836, 0.9694467382328654, 0.0305532617671346, 1.0, NaN]

31: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_31.arff test file: data/OutputData/3131.arff

Aggregate accuracy:

0.8625

tn fp tn fn: 551.0 85.0 1.0 3.0

total pos: 554.0 total neg: 86.0

[0.9945848375451264, 0.011627906976744186, 0.9883720930232558, 0.005415162454873646, 0.8625, 0.1375, 1.0, Infinity]

32: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_32.arff test file: data/OutputData/3232.arff

Aggregate accuracy:

0.9487179487179487

tn fp tn fn: 37.0 2.0 0.0 0.0

total pos: 37.0 total neg: 2.0

[1.0, 0.0, 1.0, 0.0, 0.9487179487179487, 0.05128205128205128, 1.0, Infinity]

33: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_33.arff test file: data/OutputData/3333.arff

Aggregate accuracy:

0.7590027700831025

tn fp tn fn: 274.0 0.0 0.0 87.0

total pos: 361.0 total neg: 0.0

[0.7590027700831025, NaN, NaN, 0.2409972299168975, 0.7590027700831025, 0.2409972299168975, 1.0, NaN]

IOU RESULTS:

16: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_16.arff test file: data/OutputData/1616.arff

IOU difficulty = 0.6585216755949003

IOU not-difficulty = 1.0

17: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_17.arff test file: data/OutputData/1717.arff

IOU difficulty = 0.41830065359477125

IOU not-difficulty = 1.0

18: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_18.arff test file: data/OutputData/1818.arff

IOU difficulty = 0.33003300330033003

IOU not-difficulty = 1.0

19: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_19.arff test file: data/OutputData/1919.arff

IOU difficulty = 0.7897447618685572

IOU not-difficulty = 0.8353122251539138

20: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_20.arff test file: data/OutputData/2020.arff

IOU difficulty = 0.984291071247593

IOU not-difficulty = 1.0

21: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_21.arff test file: data/OutputData/2121.arff

IOU difficulty = 0.9858560239798757

IOU not-difficulty = 0.84016139044072

22: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_22.arff test file: data/OutputData/2222.arff

IOU difficulty = 0.8553063401194902

IOU not-difficulty = 0.999630735047957

23: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_23.arff test file: data/OutputData/2323.arff

IOU difficulty = 0.963934713934714

IOU not-difficulty = 0.7569310676940011

24: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_24.arff test file: data/OutputData/2424.arff

IOU difficulty = 0.9967511403700632

IOU not-difficulty = 1.0

26: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_26.arff test file: data/OutputData/2626.arff

IOU difficulty = 0.6469776255490541

IOU not-difficulty = 1.0

27: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_27.arff test file: data/OutputData/2727.arff

IOU difficulty = 0.8939446443329626

IOU not-difficulty = 1.0

28: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_28.arff test file: data/OutputData/2828.arff

IOU difficulty = 0.8624513170605939

IOU not-difficulty = 0.9007353232793681

29: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_29.arff test file: data/OutputData/2929.arff

IOU difficulty = 0.24591054447633348

IOU not-difficulty = 1.0

30: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_30.arff test file: data/OutputData/3030.arff

IOU difficulty = 0.0

IOU not-difficulty = 1.0

31: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_31.arff test file: data/OutputData/3131.arff

IOU difficulty = 0.9434371140875843

IOU not-difficulty = 1.0

32: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

train file: data/OutputDataAll/all\_testing\_32.arff test file: data/OutputData/3232.arff

IOU difficulty = 0.0

IOU not-difficulty = 1.0

80/20 5 FOLD CV RESULTS:

tp,tn,fp,fn raw numbers: 12600.0,201.0,1504.0,529.0

tp,tn,fp,fn: 0.9597075177088887,0.11788856304985337,0.8821114369501466,0.04029248229111128

tp,tn,fp,fn raw numbers: 12505.0,201.0,1503.0,625.0

tp,tn,fp,fn: 0.9523990860624524,0.11795774647887323,0.8820422535211268,0.047600913937547604

tp,tn,fp,fn raw numbers: 12681.0,182.0,1477.0,494.0

tp,tn,fp,fn: 0.9625047438330171,0.10970464135021098,0.890295358649789,0.037495256166982925

tp,tn,fp,fn raw numbers: 12655.0,187.0,1483.0,509.0

tp,tn,fp,fn: 0.9613339410513522,0.11197604790419162,0.8880239520958084,0.03866605894864783

tp,tn,fp,fn raw numbers: 12669.0,170.0,1480.0,514.0

tp,tn,fp,fn: 0.9610103921717363,0.10303030303030303,0.896969696969697,0.038989607828263675