1) UFlorida only training + moose testing

2) UFlorida + 2/3 moose training + 1/3 moose testing  
3) 2/3 moose training + 1/3 moose testing

## Full feature set

(1) ML method and its parameters (2) any data filtering and our labeling parameters and (3) confusion matrix (for 66-34split and not 10cv)

----------------------

1. **Scenario 3**, 2 class labelling, only moose data as train and test (66-34 split) solver + pc combined , with all features : 83.8 % good accuracy , Remove Useless filter applied, b=30 labelling used

BayesNet

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.838 0.269 0.465 0.838 0.599 0.881 good

0.731 0.162 0.942 0.731 0.823 0.881 bad

Weighted Avg. 0.754 0.185 0.838 0.754 0.774 0.881

=== Confusion Matrix ===

a b <-- classified as

337 65 | a = good

387 1052 | b = bad

----------------------

RF :

Correctly Classified Instances 1830 99.4025 %  
Incorrectly Classified Instances 11 0.5975 %  
Kappa statistic 0.9826  
Mean absolute error 0.0307  
Root mean squared error 0.0805  
Relative absolute error 9.1177 %  
Root relative squared error 19.4803 %  
Total Number of Instances 1841   
  
=== Detailed Accuracy By Class ===  
  
 TP Rate FP Rate Precision Recall F-Measure ROC Area Class  
 0.995 0.006 0.978 0.995 0.986 1 good  
 0.994 0.005 0.999 0.994 0.996 1 bad  
Weighted Avg. 0.994 0.005 0.994 0.994 0.994 1   
  
=== Confusion Matrix ===  
  
 a b <-- classified as  
 400 2 | a = good  
 9 1430 | b = bad

---------------------------

ADT

=== Detailed Accuracy By Class ===  
  
 TP Rate FP Rate Precision Recall F-Measure ROC Area Class  
 0.975 0.003 0.987 0.975 0.981 0.999 good  
 0.997 0.025 0.993 0.997 0.995 0.999 bad  
Weighted Avg. 0.992 0.02 0.992 0.992 0.992 0.999  
  
=== Confusion Matrix ===  
  
 a b <-- classified as  
 392 10 | a = good  
 5 1434 | b = bad

---------------------

KNN

== Detailed Accuracy By Class ===  
  
 TP Rate FP Rate Precision Recall F-Measure ROC Area Class  
 0.863 0.024 0.911 0.863 0.886 0.988 good  
 0.976 0.137 0.962 0.976 0.969 0.988 bad  
Weighted Avg. 0.952 0.112 0.951 0.952 0.951 0.988  
  
=== Confusion Matrix ===  
  
 a b <-- classified as  
 347 55 | a = good  
 34 1405 | b = bad

----------------------------------

J48

=== Detailed Accuracy By Class ===  
  
 TP Rate FP Rate Precision Recall F-Measure ROC Area Class  
 0.985 0.004 0.985 0.985 0.985 0.994 good  
 0.996 0.015 0.996 0.996 0.996 0.994 bad  
Weighted Avg. 0.993 0.013 0.993 0.993 0.993 0.994  
  
=== Confusion Matrix ===  
  
 a b <-- classified as  
 396 6 | a = good  
 6 1433 | b = bad

Scenario 3: All features

All features, 5414 moose (train + test)

RemoveUseless Filter 2class labelling (solver + pc combined)

b=30

66-34%train test split

1152 good

4262 bad

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ML mtd** | **Noise filtering** | | | |
| **B= 30** | **10-cv** | | **66-34%split** | |
| 5414 datapts | **Overall accuracy** | **Good solver accuracy** | **Overall accuracy** | **Good solver accuracy** |
| LibSVM | 44.7 | 67.8 | 21.8 | 100(do not consider, as all labelled as good , 0% bad accuracy) |
| RF(100) | 99.4 | 99.4 | 99.4 | 99.5 |
| BN | 75.7 | 81.3 | 75.4 | 83.8 |
| knn(K=10) | 96.6 | 91.2 | 95.1 | 86.3 |
| ADT | 98.7 | 95.1 | 99.1 | 97.5 |
| J48 | 99.4 | 99.4 | 99.3 | 98.5 |

**Scenario 1:** All features 5437 UFlorida (train) + 5414 moose (test)

RemoveUseless Filter + <10,000 nnz excluded from training set

2class labelling (solver + pc combined)

b=30

2109 good, 8742 bad

50.11 % train, 49.89 % test

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ML mtd** | **Noise filtering** | | | |
| **B= 30** | **10-cv(No more Uflorida as train, moose as test; its a mix)** | | 50.11 % train, 49.89 % test | |
| 10851 datapts | **Overall accuracy** | **Good solver accuracy** | **Overall accuracy** | **Good solver accuracy** |
| LibSVM | Too slow | Too slow | 19.56 | 100(do not consider, as all labelled as good , 0% bad accuracy) |
| RF(100) | 95.6 | 83.2 | 94.5 | 80.5 |
| BN | 78.7 | 57.7 | 76.5 | 63.6 |
| knn(K=10) | 90.4 | 65.3 | 89.3 | 64.7 |
| ADT | 89.8 | 54.3 | 88.5 | 53.1 |
| J48 | 96.0 | 89.4 | 95.0 | 87.2 |

RF

Correctly Classified Instances 5120 94.5696 %

Incorrectly Classified Instances 294 5.4304 %

Kappa statistic 0.8198

Mean absolute error 0.1007

Root mean squared error 0.2019

Relative absolute error 32.154 %

Root relative squared error 50.9052 %

Total Number of Instances 5414

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.805 0.02 0.906 0.805 0.853 0.981 good

0.98 0.195 0.954 0.98 0.967 0.981 bad

Weighted Avg. 0.946 0.16 0.945 0.946 0.944 0.981

=== Confusion Matrix ===

a b <-- classified as

853 206 | a = good

88 4267 | b = bad

----------------------------------------------------

BayesNet

Correctly Classified Instances 4142 76.5054 %

Incorrectly Classified Instances 1272 23.4946 %

Kappa statistic 0.367

Mean absolute error 0.2395

Root mean squared error 0.4639

Relative absolute error 76.4703 %

Root relative squared error 116.9465 %

Total Number of Instances 5414

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.636 0.204 0.432 0.636 0.515 0.807 good

0.796 0.364 0.9 0.796 0.845 0.807 bad

Weighted Avg. 0.765 0.332 0.808 0.765 0.78 0.807

=== Confusion Matrix ===

a b <-- classified as

674 385 | a = good

887 3468 | b = bad

----------------------------------------------------

LibSVM

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

1 1 0.196 1 0.327 0.5 good

0 0 0 0 0 0.5 bad

Weighted Avg. 0.196 0.196 0.038 0.196 0.064 0.5

=== Confusion Matrix ===

a b <-- classified as

1059 0 | a = good

4355 0 | b = bad

----------------------------------------------------

Knn

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.647 0.047 0.771 0.647 0.704 0.919 good

0.953 0.353 0.917 0.953 0.935 0.919 bad

Weighted Avg. 0.893 0.293 0.889 0.893 0.89 0.919

=== Confusion Matrix ===

a b <-- classified as

685 374 | a = good

203 4152 | b = bad

----------------------------------------------------

ADT

Correctly Classified Instances 4792 88.5113 %

Incorrectly Classified Instances 622 11.4887 %

Kappa statistic 0.5789

Mean absolute error 0.2028

Root mean squared error 0.2967

Relative absolute error 64.735 %

Root relative squared error 74.7886 %

Total Number of Instances 5414

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.531 0.029 0.818 0.531 0.644 0.927 good

0.971 0.469 0.895 0.971 0.932 0.927 bad

Weighted Avg. 0.885 0.383 0.88 0.885 0.875 0.927

=== Confusion Matrix ===

a b <-- classified as

562 497 | a = good

125 4230 | b = bad

----------------------------------------------------

J48

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.872 0.03 0.875 0.872 0.873 0.934 good

0.97 0.128 0.969 0.97 0.969 0.934 bad

Weighted Avg. 0.95 0.109 0.95 0.95 0.95 0.934

=== Confusion Matrix ===

a b <-- classified as

923 136 | a = good

132 4223 | b = bad

----------------------------------------------------

Confusion Matrix For 10cv for scenario 1

J48

Correctly Classified Instances 10426 96.0833 %

Incorrectly Classified Instances 425 3.9167 %

Kappa statistic 0.8744

Mean absolute error 0.0474

Root mean squared error 0.189

Relative absolute error 15.1381 %

Root relative squared error 47.7559 %

Total Number of Instances 10851

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.894 0.023 0.904 0.894 0.899 0.949 good

0.977 0.106 0.974 0.977 0.976 0.949 bad

Weighted Avg. 0.961 0.09 0.961 0.961 0.961 0.949

=== Confusion Matrix ===

a b <-- classified as

1885 224 | a = good

201 8541 | b = bad

----------------------------------------------------

ADT

Correctly Classified Instances 9749 89.8443 %

Incorrectly Classified Instances 1102 10.1557 %

Kappa statistic 0.6191

Mean absolute error 0.2028

Root mean squared error 0.2857

Relative absolute error 64.7604 %

Root relative squared error 72.2104 %

Total Number of Instances 10851

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.543 0.016 0.892 0.543 0.675 0.933 good

0.984 0.457 0.899 0.984 0.94 0.933 bad

Weighted Avg. 0.898 0.371 0.898 0.898 0.888 0.933

=== Confusion Matrix ===

a b <-- classified as

1145 964 | a = good

138 8604 | b = bad

----------------------------------------------------

KNN

Correctly Classified Instances 9812 90.4248 %

Incorrectly Classified Instances 1039 9.5752 %

Kappa statistic 0.6691

Mean absolute error 0.1254

Root mean squared error 0.2604

Relative absolute error 40.0296 %

Root relative squared error 65.7977 %

Total Number of Instances 10851

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.653 0.035 0.817 0.653 0.726 0.94 good

0.965 0.347 0.92 0.965 0.942 0.94 bad

Weighted Avg. 0.904 0.286 0.9 0.904 0.9 0.94

=== Confusion Matrix ===

a b <-- classified as

1378 731 | a = good

308 8434 | b = bad

----------------------------------------------------

BN

Correctly Classified Instances 8550 78.7946 %

Incorrectly Classified Instances 2301 21.2054 %

Kappa statistic 0.3805

Mean absolute error 0.2152

Root mean squared error 0.4449

Relative absolute error 68.7035 %

Root relative squared error 112.4431 %

Total Number of Instances 10851

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.577 0.161 0.463 0.577 0.514 0.814 good

0.839 0.423 0.892 0.839 0.864 0.814 bad

Weighted Avg. 0.788 0.372 0.808 0.788 0.796 0.814

=== Confusion Matrix ===

a b <-- classified as

1217 892 | a = good

1409 7333 | b = bad

----------------------------------------------------

RF

Correctly Classified Instances 10382 95.6778 %

Incorrectly Classified Instances 469 4.3222 %

Kappa statistic 0.8558

Mean absolute error 0.0843

Root mean squared error 0.1803

Relative absolute error 26.9219 %

Root relative squared error 45.5681 %

Total Number of Instances 10851

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.832 0.013 0.939 0.832 0.882 0.99 good

0.987 0.168 0.961 0.987 0.974 0.99 bad

Weighted Avg. 0.957 0.138 0.956 0.957 0.956 0.99

=== Confusion Matrix ===

a b <-- classified as

1755 354 | a = good

115 8627 | b = bad

**Scenario 2:** All features [5437 UFlorida + 3609 moose] (train) +[1805 moose (test)]

(UFlorida + 2/3rd moose as train) + (1/3rd moose as test)

RemoveUseless Filter + <10,000 nnz excluded from training set

2class labelling (solver + pc combined)

b=30

2109 good, 8742 bad

Same data file as scenario 1, just diff. Train-test split

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ML mtd** | **Noise filtering** | | | |
| **B= 30** | **10-cv** | | **83.37 train-16.63 test split** | |
| 10851 datapts | **Overall accuracy** | **Good solver accuracy** | **Overall accuracy** | **Good solver accuracy** |
| LibSVM | Same as scenario 1, 10cv | Same as scenario 1, 10cv | Too slow | Too slow |
| RF(100) | Same as scenario 1, 10cv | Same as scenario 1, 10cv | 95.6 | 83.7 |
| BN | Same as scenario 1, 10cv | Same as scenario 1, 10cv | 77.8 | 60.8 |
| knn(K=10) | Same as scenario 1, 10cv | Same as scenario 1, 10cv | 90.4 | 66.3 |
| ADT | Same as scenario 1, 10cv | Same as scenario 1, 10cv | 90.3 | 58.0 |
| J48 | Same as scenario 1, 10cv | Same as scenario 1, 10cv | 95.9 | 90.1 |

RF

Correctly Classified Instances 1726 95.6233 %

Incorrectly Classified Instances 79 4.3767 %

Kappa statistic 0.8578

Mean absolute error 0.087

Root mean squared error 0.1858

Relative absolute error 27.5243 %

Root relative squared error 46.4002 %

Total Number of Instances 1805

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.837 0.014 0.938 0.837 0.885 0.986 good

0.986 0.163 0.96 0.986 0.973 0.986 bad

Weighted Avg. 0.956 0.133 0.956 0.956 0.955 0.986

=== Confusion Matrix ===

a b <-- classified as

303 59 | a = good

20 1423 | b = bad

----------------------------------------------------

BN

Correctly Classified Instances 1405 77.8393 %

Incorrectly Classified Instances 400 22.1607 %

Kappa statistic 0.383

Mean absolute error 0.2237

Root mean squared error 0.4548

Relative absolute error 70.7395 %

Root relative squared error 113.5543 %

Total Number of Instances 1805

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.608 0.179 0.46 0.608 0.524 0.815 good

0.821 0.392 0.893 0.821 0.856 0.815 bad

Weighted Avg. 0.778 0.349 0.806 0.778 0.789 0.815

=== Confusion Matrix ===

a b <-- classified as

220 142 | a = good

258 1185 | b = bad

----------------------------------------------------

Knn

Correctly Classified Instances 1632 90.4155 %

Incorrectly Classified Instances 173 9.5845 %

Kappa statistic 0.6774

Mean absolute error 0.1261

Root mean squared error 0.2636

Relative absolute error 39.8868 %

Root relative squared error 65.8184 %

Total Number of Instances 1805

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.663 0.035 0.825 0.663 0.735 0.935 good

0.965 0.337 0.919 0.965 0.941 0.935 bad

Weighted Avg. 0.904 0.277 0.9 0.904 0.9 0.935

=== Confusion Matrix ===

a b <-- classified as

240 122 | a = good

51 1392 | b = bad

----------------------------------------------------

ADT

Correctly Classified Instances 1630 90.3047 %

Incorrectly Classified Instances 175 9.6953 %

Kappa statistic 0.6511

Mean absolute error 0.2027

Root mean squared error 0.2918

Relative absolute error 64.0997 %

Root relative squared error 72.8743 %

Total Number of Instances 1805

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.58 0.016 0.901 0.58 0.706 0.932 good

0.984 0.42 0.903 0.984 0.942 0.932 bad

Weighted Avg. 0.903 0.339 0.903 0.903 0.895 0.932

=== Confusion Matrix ===

a b <-- classified as

210 152 | a = good

23 1420 | b = bad

----------------------------------------------------

J48

Correctly Classified Instances 1732 95.9557 %

Incorrectly Classified Instances 73 4.0443 %

Kappa statistic 0.874

Mean absolute error 0.0467

Root mean squared error 0.1908

Relative absolute error 14.7791 %

Root relative squared error 47.648 %

Total Number of Instances 1805

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.901 0.026 0.898 0.901 0.899 0.945 good

0.974 0.099 0.975 0.974 0.975 0.945 bad

Weighted Avg. 0.96 0.085 0.96 0.96 0.96 0.945

=== Confusion Matrix ===

a b <-- classified as

326 36 | a = good

37 1406 | b = bad

----------------------------------------------------

**Analysis for Reduced sets**

More data than for all feature analysis

RS1 (8 features)

**Scenario 3:** [ moose] (train) +[ moose (test)]

2class labelling (solver + pc combined)

b=30

479 good, 9270 bad

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ML mtd** | **Noise filtering** | | | |
| **B= 30** | **10-cv** | | **66-34 train-test split** | |
| 9749 datapts | **Overall accuracy** | **Good solver accuracy** | **Overall accuracy** | **Good solver accuracy** |
| LibSVM | TOO SLOW | TOO SLOW | TOO SLOW | TOO SLOW |
| RF(100) | 99.9 | 99 | 99.9 | 98.8 |
| BN | 95.1 | 96.5 | 94.7 | 95.7 |
| knn(K=10) | 99.3 | 94.6 | 99.1 | 92.7 |
| ADT | 99.7 | 95.2 | 99.9 | 98.8 |
| J48 | 99.9 | 99.6 | 99.9 | 98.8 |

CONFUSION MATRICES FOR 66-34%SPLIT

RF

Correctly Classified Instances 3313 99.9397 %

Incorrectly Classified Instances 2 0.0603 %

Kappa statistic 0.9935

Mean absolute error 0.0021

Root mean squared error 0.0214

Relative absolute error 2.2436 %

Root relative squared error 9.8898 %

Total Number of Instances 3315

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.988 0 1 0.988 0.994 1 good

1 0.012 0.999 1 1 1 bad

Weighted Avg. 0.999 0.012 0.999 0.999 0.999 1

=== Confusion Matrix ===

a b <-- classified as

162 2 | a = good

0 3151 | b = bad

----------------------------------------------------

BN

Correctly Classified Instances 3141 94.7511 %

Incorrectly Classified Instances 174 5.2489 %

Kappa statistic 0.6184

Mean absolute error 0.0379

Root mean squared error 0.1519

Relative absolute error 40.4802 %

Root relative squared error 70.0257 %

Total Number of Instances 3315

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.957 0.053 0.485 0.957 0.643 0.995 good

0.947 0.043 0.998 0.947 0.972 0.995 bad

Weighted Avg. 0.948 0.043 0.972 0.948 0.955 0.995

=== Confusion Matrix ===

a b <-- classified as

157 7 | a = good

167 2984 | b = bad

----------------------------------------------------

ADT

Correctly Classified Instances 3313 99.9397 %

Incorrectly Classified Instances 2 0.0603 %

Kappa statistic 0.9935

Mean absolute error 0.0123

Root mean squared error 0.0469

Relative absolute error 13.0951 %

Root relative squared error 21.609 %

Total Number of Instances 3315

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.988 0 1 0.988 0.994 0.993 good

1 0.012 0.999 1 1 0.993 bad

Weighted Avg. 0.999 0.012 0.999 0.999 0.999 0.993

=== Confusion Matrix ===

a b <-- classified as

162 2 | a = good

0 3151 | b = bad

----------------------------------------------------

J48

Correctly Classified Instances 3313 99.9397 %

Incorrectly Classified Instances 2 0.0603 %

Kappa statistic 0.9935

Mean absolute error 0.0006

Root mean squared error 0.0246

Relative absolute error 0.6438 %

Root relative squared error 11.3269 %

Total Number of Instances 3315

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.988 0 1 0.988 0.994 0.994 good

1 0.012 0.999 1 1 0.994 bad

Weighted Avg. 0.999 0.012 0.999 0.999 0.999 0.994

=== Confusion Matrix ===

a b <-- classified as

162 2 | a = good

0 3151 | b = bad

----------------------------------------------------

KNN

Correctly Classified Instances 3286 99.1252 %

Incorrectly Classified Instances 29 0.8748 %

Kappa statistic 0.9083

Mean absolute error 0.0128

Root mean squared error 0.0793

Relative absolute error 13.6323 %

Root relative squared error 36.5632 %

Total Number of Instances 3315

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.927 0.005 0.899 0.927 0.913 0.999 good

0.995 0.073 0.996 0.995 0.995 0.999 bad

Weighted Avg. 0.991 0.07 0.991 0.991 0.991 0.999

=== Confusion Matrix ===

a b <-- classified as

152 12 | a = good

17 3134 | b = bad

----------------------------------------------------

RS2 (6 features)

**Scenario 3:** [ moose] (train) +[ moose (test)]

2class labelling (solver + pc combined)

b=30

479 good, 9270 bad

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ML mtd** | **Noise filtering** | | | |
| **B= 30** | **10-cv** | | **66-34% train-test split** | |
| 9749 datapts | **Overall accuracy** | **Good solver accuracy** | **Overall accuracy** | **Good solver accuracy** |
| LibSVM | TOO SLOW | TOO SLOW | TOO SLOW | TOO SLOW |
| RF(100) | 99.9 | 99.9 | 99.9 | 98.8 |
| BN | 95.1 | 96.5 | 94.7 | 95.7 |
| knn(K=10) | 99.3 | 95.4 | 99.1 | 93.3 |
| ADT | 99.7 | 95.0 | 99.9 | 98.8 |
| J48 | 99.9 | 99.6 | 99.9 | 98.8 |

Confusion Matrix for 66-34%train-test split

J48

Correctly Classified Instances 3313 99.9397 %

Incorrectly Classified Instances 2 0.0603 %

Kappa statistic 0.9935

Mean absolute error 0.0006

Root mean squared error 0.0246

Relative absolute error 0.6438 %

Root relative squared error 11.3269 %

Total Number of Instances 3315

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.988 0 1 0.988 0.994 0.994 good

1 0.012 0.999 1 1 0.994 bad

Weighted Avg. 0.999 0.012 0.999 0.999 0.999 0.994

=== Confusion Matrix ===

a b <-- classified as

162 2 | a = good

0 3151 | b = bad

----------------------------------------------------

RF

Correctly Classified Instances 3313 99.9397 %

Incorrectly Classified Instances 2 0.0603 %

Kappa statistic 0.9935

Mean absolute error 0.0015

Root mean squared error 0.0224

Relative absolute error 1.5966 %

Root relative squared error 10.3329 %

Total Number of Instances 3315

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.988 0 1 0.988 0.994 1 good

1 0.012 0.999 1 1 1 bad

Weighted Avg. 0.999 0.012 0.999 0.999 0.999 1

=== Confusion Matrix ===

a b <-- classified as

162 2 | a = good

0 3151 | b = bad

----------------------------------------------------

BN

Correctly Classified Instances 3141 94.7511 %

Incorrectly Classified Instances 174 5.2489 %

Kappa statistic 0.6184

Mean absolute error 0.0379

Root mean squared error 0.1519

Relative absolute error 40.4802 %

Root relative squared error 70.0257 %

Total Number of Instances 3315

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.957 0.053 0.485 0.957 0.643 0.995 good

0.947 0.043 0.998 0.947 0.972 0.995 bad

Weighted Avg. 0.948 0.043 0.972 0.948 0.955 0.995

=== Confusion Matrix ===

a b <-- classified as

157 7 | a = good

167 2984 | b = bad

----------------------------------------------------

KNN

Correctly Classified Instances 3288 99.1855 %

Incorrectly Classified Instances 27 0.8145 %

Kappa statistic 0.9146

Mean absolute error 0.0125

Root mean squared error 0.0782

Relative absolute error 13.3748 %

Root relative squared error 36.0508 %

Total Number of Instances 3315

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.933 0.005 0.905 0.933 0.919 0.999 good

0.995 0.067 0.997 0.995 0.996 0.999 bad

Weighted Avg. 0.992 0.064 0.992 0.992 0.992 0.999

=== Confusion Matrix ===

a b <-- classified as

153 11 | a = good

16 3135 | b = bad

----------------------------------------------------

ADT

Correctly Classified Instances 3313 99.9397 %

Incorrectly Classified Instances 2 0.0603 %

Kappa statistic 0.9935

Mean absolute error 0.0123

Root mean squared error 0.0469

Relative absolute error 13.0951 %

Root relative squared error 21.609 %

Total Number of Instances 3315

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure ROC Area Class

0.988 0 1 0.988 0.994 0.993 good

1 0.012 0.999 1 1 0.993 bad

Weighted Avg. 0.999 0.012 0.999 0.999 0.999 0.993

=== Confusion Matrix ===

a b <-- classified as

162 2 | a = good

0 3151 | b = bad