**Naive Bayes Classifier**

Class

Attribute Pass Withdrawn Fail Distinction

(0.43) (0.27) (0.14) (0.16)

================================================================================

weight

mean 15.0751 11.6028 11.2102 14.5377

std. dev. 19.7173 14.9156 12.9536 21.2141

weight sum 1085 676 351 387

precision 4.3478 4.3478 4.3478 4.3478

module\_presentation\_length

mean 253.043 254.4403 255.0214 256.4858

std. dev. 13.9098 13.3405 13.9699 14.1266

weight sum 1085 676 351 387

precision 5.8333 5.8333 5.8333 5.8333

is\_banked

mean 0.0184 0.1583 0.1453 0

std. dev. 0.1667 0.365 0.3524 0.1667

weight sum 1085 676 351 387

precision 1 1 1 1

gender

M 649.0 461.0 246.0 208.0

F 438.0 217.0 107.0 181.0

[total] 1087.0 678.0 353.0 389.0

highest\_education

HE Qualification 332.0 169.0 33.0 161.0

Lower Than A Level 320.0 315.0 191.0 108.0

A Level or Equivalent 431.0 195.0 128.0 112.0

Post Graduate Qualification 6.0 1.0 1.0 10.0

No Formal quals 1.0 1.0 3.0 1.0

[total] 1090.0 681.0 356.0 392.0

imd\_band

80-90% 155.0 83.0 9.0 10.0

30-40% 110.0 108.0 46.0 34.0

90-100% 168.0 80.0 43.0 46.0

20-30% 102.0 26.0 16.0 6.0

50-60% 89.0 38.0 22.0 128.0

20-Oct 86.0 125.0 40.0 73.0

40-50% 126.0 45.0 39.0 13.0

60-70% 100.0 85.0 36.0 24.0

70-80% 30.0 25.0 47.0 10.0

0-10% 54.0 49.0 56.0 19.0

[total] 1020.0 664.0 354.0 363.0

num\_of\_prev\_attempts

mean 0.2516 0.4098 0.9744 0

std. dev. 0.4667 0.7066 1.2251 0.1667

weight sum 1085 676 351 387

precision 1 1 1 1

studied\_credits

mean 70.03 86.8047 83.0769 82.4419

std. dev. 29.6353 38.4718 25.1563 38.9935

weight sum 1085 676 351 387

precision 22.5 22.5 22.5 22.5

disability

N 1037.0 596.0 248.0 376.0

Y 50.0 82.0 105.0 13.0

[total] 1087.0 678.0 353.0 389.0

activity\_type

resource 627.0 342.0 185.0 224.0

oucontent 121.0 104.0 54.0 49.0

url 80.0 74.0 35.0 34.0

homepage 6.0 2.0 3.0 2.0

subpage 158.0 91.0 46.0 52.0

glossary 6.0 2.0 3.0 3.0

forumng 54.0 32.0 16.0 14.0

oucollaborate 6.0 4.0 4.0 5.0

dataplus 4.0 3.0 3.0 2.0

quiz 20.0 18.0 8.0 9.0

ouelluminate 3.0 4.0 1.0 1.0

sharedsubpage 2.0 2.0 2.0 1.0

questionnaire 4.0 1.0 2.0 1.0

page 3.0 4.0 1.0 1.0

externalquiz 2.0 5.0 1.0 3.0

ouwiki 5.0 4.0 3.0 2.0

[total] 1101.0 692.0 367.0 403.0

Time taken to build model: 0.11 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 1401 56.0624 %

Incorrectly Classified Instances 1098 43.9376 %

Kappa statistic 0.3344

Mean absolute error 0.2767

Root mean squared error 0.3876

Relative absolute error 79.6506 %

Root relative squared error 93.0057 %

Total Number of Instances 2499

=== Detailed Accuracy By Class ===

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

0.813 0.431 0.592 0.813 0.685 0.386 0.739 0.654 Pass

0.297 0.125 0.469 0.297 0.364 0.203 0.634 0.449 Withdrawn

0.419 0.047 0.590 0.419 0.490 0.431 0.810 0.483 Fail

0.442 0.075 0.518 0.442 0.477 0.392 0.835 0.485 Distinction

Weighted Avg. 0.561 0.239 0.547 0.561 0.538 0.344 0.735 0.548

=== Confusion Matrix ===

a b c d <-- classified as

882 117 15 71 | a = Pass

331 201 76 68 | b = Withdrawn

121 63 147 20 | c = Fail

157 48 11 171 | d = Distinction

**IB1 instance-based classifier**

**using 1 nearest neighbour(s) for classification**

Time taken to build model: 0 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 2038 81.5526 %

Incorrectly Classified Instances 461 18.4474 %

Kappa statistic 0.7333

Mean absolute error 0.0908

Root mean squared error 0.284

Relative absolute error 26.1415 %

Root relative squared error 68.1481 %

Total Number of Instances 2499

=== Detailed Accuracy By Class ===

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

0.865 0.116 0.851 0.865 0.858 0.747 0.926 0.884 Pass

0.780 0.091 0.760 0.780 0.770 0.683 0.901 0.779 Withdrawn

0.840 0.015 0.899 0.840 0.869 0.849 0.930 0.818 Fail

0.718 0.046 0.739 0.718 0.729 0.680 0.915 0.748 Distinction

Weighted Avg. 0.816 0.084 0.816 0.816 0.816 0.734 0.918 0.825

=== Confusion Matrix ===

a b c d <-- classified as

938 87 19 41 | a = Pass

88 527 14 47 | b = Withdrawn

28 18 295 10 | c = Fail

48 61 0 278 | d = Distinction

**J48 pruned tree**

num\_of\_prev\_attempts <= 0

| studied\_credits <= 60

| | imd\_band = 80-90%

| | | disability = N

| | | | studied\_credits <= 30

| | | | | weight <= 1: Distinction (9.0)

| | | | | weight > 1: Pass (7.4)

| | | | studied\_credits > 30: Pass (132.51/28.88)

| | | disability = Y: Fail (7.0)

| | imd\_band = 30-40%

| | | highest\_education = HE Qualification

| | | | module\_presentation\_length <= 261

| | | | | module\_presentation\_length <= 241: Pass (13.0/1.0)

| | | | | module\_presentation\_length > 241: Distinction (7.0)

| | | | module\_presentation\_length > 261: Pass (17.96/0.96)

| | | highest\_education = Lower Than A Level

| | | | studied\_credits <= 30: Pass (7.1)

| | | | studied\_credits > 30

| | | | | gender = M

| | | | | | weight <= 10: Withdrawn (8.0)

| | | | | | weight > 10: Fail (3.0)

| | | | | gender = F: Fail (15.0)

| | | highest\_education = A Level or Equivalent

| | | | studied\_credits <= 30

| | | | | module\_presentation\_length <= 262: Pass (8.96)

| | | | | module\_presentation\_length > 262: Distinction (14.0)

| | | | studied\_credits > 30

| | | | | gender = M: Withdrawn (63.0/11.0)

| | | | | gender = F: Distinction (12.0)

| | | highest\_education = Post Graduate Qualification: Pass (0.68)

| | | highest\_education = No Formal quals: Withdrawn (0.0)

| | imd\_band = 90-100%

| | | highest\_education = HE Qualification

| | | | module\_presentation\_length <= 268: Pass (94.0)

| | | | module\_presentation\_length > 268: Distinction (17.12/8.12)

| | | highest\_education = Lower Than A Level: Pass (8.3)

| | | highest\_education = A Level or Equivalent

| | | | studied\_credits <= 30: Pass (41.12/18.0)

| | | | studied\_credits > 30

| | | | | module\_presentation\_length <= 241: Fail (2.0)

| | | | | module\_presentation\_length > 241: Withdrawn (35.0/12.0)

| | | highest\_education = Post Graduate Qualification: Pass (0.8)

| | | highest\_education = No Formal quals: Pass (0.0)

| | imd\_band = 20-30%

| | | gender = M

| | | | disability = N

| | | | | highest\_education = HE Qualification: Pass (7.42/0.42)

| | | | | highest\_education = Lower Than A Level

| | | | | | studied\_credits <= 30: Pass (3.15)

| | | | | | studied\_credits > 30: Withdrawn (18.0)

| | | | | highest\_education = A Level or Equivalent: Withdrawn (4.42/1.42)

| | | | | highest\_education = Post Graduate Qualification: Pass (0.3)

| | | | | highest\_education = No Formal quals: Withdrawn (0.0)

| | | | disability = Y: Fail (4.0)

| | | gender = F

| | | | highest\_education = HE Qualification

| | | | | module\_presentation\_length <= 268: Pass (5.0)

| | | | | module\_presentation\_length > 268: Distinction (5.0)

| | | | highest\_education = Lower Than A Level: Pass (17.0)

| | | | highest\_education = A Level or Equivalent

| | | | | module\_presentation\_length <= 241: Fail (2.0)

| | | | | module\_presentation\_length > 241: Pass (9.0)

| | | | highest\_education = Post Graduate Qualification: Pass (0.0)

| | | | highest\_education = No Formal quals: Pass (0.0)

| | imd\_band = 50-60%

| | | highest\_education = HE Qualification: Distinction (85.05/1.05)

| | | highest\_education = Lower Than A Level

| | | | gender = M: Pass (19.81/3.0)

| | | | gender = F

| | | | | weight <= 18: Withdrawn (21.0/1.0)

| | | | | weight > 18: Pass (4.0)

| | | highest\_education = A Level or Equivalent

| | | | module\_presentation\_length <= 241: Pass (27.05)

| | | | module\_presentation\_length > 241

| | | | | module\_presentation\_length <= 268

| | | | | | gender = M: Distinction (11.0)

| | | | | | gender = F: Pass (5.0)

| | | | | module\_presentation\_length > 268: Pass (13.0)

| | | highest\_education = Post Graduate Qualification: Pass (0.75)

| | | highest\_education = No Formal quals: Distinction (0.0)

| | imd\_band = 20-Oct: Pass (65.76/3.37)

| | imd\_band = 40-50%

| | | module\_presentation\_length <= 262

| | | | module\_presentation\_length <= 241: Pass (67.49/4.0)

| | | | module\_presentation\_length > 241

| | | | | gender = M: Withdrawn (17.0)

| | | | | gender = F: Pass (10.0)

| | | module\_presentation\_length > 262

| | | | gender = M

| | | | | module\_presentation\_length <= 268: Distinction (12.54/0.54)

| | | | | module\_presentation\_length > 268: Pass (9.66/0.76)

| | | | gender = F: Pass (18.0/1.0)

| | imd\_band = 60-70%

| | | module\_presentation\_length <= 262

| | | | highest\_education = HE Qualification

| | | | | module\_presentation\_length <= 240: Withdrawn (26.0)

| | | | | module\_presentation\_length > 240: Distinction (15.0/6.0)

| | | | highest\_education = Lower Than A Level: Withdrawn (19.58/1.58)

| | | | highest\_education = A Level or Equivalent

| | | | | module\_presentation\_length <= 241: Pass (12.69)

| | | | | module\_presentation\_length > 241: Withdrawn (16.0)

| | | | highest\_education = Post Graduate Qualification: Withdrawn (0.0)

| | | | highest\_education = No Formal quals: Withdrawn (0.0)

| | | module\_presentation\_length > 262

| | | | module\_presentation\_length <= 268: Fail (12.49/0.49)

| | | | module\_presentation\_length > 268: Pass (21.26/7.69)

| | imd\_band = 70-80%

| | | studied\_credits <= 30

| | | | gender = M: Pass (10.32)

| | | | gender = F: Fail (2.0)

| | | studied\_credits > 30

| | | | gender = M

| | | | | highest\_education = HE Qualification: Fail (11.27)

| | | | | highest\_education = Lower Than A Level

| | | | | | module\_presentation\_length <= 268: Pass (5.0)

| | | | | | module\_presentation\_length > 268: Fail (12.0)

| | | | | highest\_education = A Level or Equivalent: Fail (6.0)

| | | | | highest\_education = Post Graduate Qualification: Pass (0.2)

| | | | | highest\_education = No Formal quals: Fail (0.0)

| | | | gender = F: Withdrawn (2.0)

| | imd\_band = 0-10%

| | | module\_presentation\_length <= 240: Fail (9.0)

| | | module\_presentation\_length > 240

| | | | highest\_education = HE Qualification: Distinction (6.48/0.48)

| | | | highest\_education = Lower Than A Level

| | | | | studied\_credits <= 30: Pass (48.55/18.0)

| | | | | studied\_credits > 30

| | | | | | module\_presentation\_length <= 262: Withdrawn (5.0/1.0)

| | | | | | module\_presentation\_length > 262: Fail (3.0)

| | | | highest\_education = A Level or Equivalent: Pass (12.48)

| | | | highest\_education = Post Graduate Qualification: Pass (0.34)

| | | | highest\_education = No Formal quals: Pass (0.0)

| studied\_credits > 60

| | imd\_band = 80-90%

| | | studied\_credits <= 105

| | | | module\_presentation\_length <= 241: Withdrawn (4.54/2.27)

| | | | module\_presentation\_length > 241: Pass (12.0)

| | | studied\_credits > 105

| | | | module\_presentation\_length <= 240: Distinction (2.37/1.13)

| | | | module\_presentation\_length > 240: Withdrawn (45.0)

| | imd\_band = 30-40%

| | | module\_presentation\_length <= 234: Fail (6.0)

| | | module\_presentation\_length > 234: Withdrawn (22.03/2.03)

| | imd\_band = 90-100%

| | | module\_presentation\_length <= 268

| | | | module\_presentation\_length <= 241

| | | | | module\_presentation\_length <= 240: Distinction (3.16/1.51)

| | | | | module\_presentation\_length > 240: Withdrawn (30.05/3.02)

| | | | module\_presentation\_length > 241: Pass (32.0/12.0)

| | | module\_presentation\_length > 268: Distinction (20.0/2.0)

| | imd\_band = 20-30%

| | | disability = N

| | | | gender = M: Distinction (5.94/2.92)

| | | | gender = F: Pass (46.0/1.0)

| | | disability = Y: Fail (3.0)

| | imd\_band = 50-60%

| | | highest\_education = HE Qualification: Withdrawn (4.18/2.51)

| | | highest\_education = Lower Than A Level: Distinction (23.0)

| | | highest\_education = A Level or Equivalent

| | | | module\_presentation\_length <= 241: Distinction (9.91)

| | | | module\_presentation\_length > 241: Pass (10.0)

| | | highest\_education = Post Graduate Qualification: Distinction (0.0)

| | | highest\_education = No Formal quals: Distinction (0.0)

| | imd\_band = 20-Oct

| | | studied\_credits <= 105

| | | | studied\_credits <= 70: Fail (7.0)

| | | | studied\_credits > 70: Withdrawn (108.97/54.48)

| | | studied\_credits > 105

| | | | gender = M

| | | | | module\_presentation\_length <= 241

| | | | | | highest\_education = HE Qualification: Pass (3.24)

| | | | | | highest\_education = Lower Than A Level: Pass (11.0)

| | | | | | highest\_education = A Level or Equivalent

| | | | | | | studied\_credits <= 120: Distinction (15.54)

| | | | | | | studied\_credits > 120: Pass (3.0)

| | | | | | highest\_education = Post Graduate Qualification: Pass (0.0)

| | | | | | highest\_education = No Formal quals: Pass (0.0)

| | | | | module\_presentation\_length > 241

| | | | | | highest\_education = HE Qualification: Distinction (0.0)

| | | | | | highest\_education = Lower Than A Level: Distinction (12.0)

| | | | | | highest\_education = A Level or Equivalent: Fail (4.0)

| | | | | | highest\_education = Post Graduate Qualification: Distinction (0.0)

| | | | | | highest\_education = No Formal quals: Distinction (0.0)

| | | | gender = F: Fail (18.0)

| | imd\_band = 40-50%

| | | disability = N: Withdrawn (23.88/2.6)

| | | disability = Y: Fail (12.0)

| | imd\_band = 60-70%

| | | highest\_education = HE Qualification

| | | | module\_presentation\_length <= 240: Pass (12.82)

| | | | module\_presentation\_length > 240: Distinction (12.26/1.63)

| | | highest\_education = Lower Than A Level

| | | | module\_presentation\_length <= 241: Fail (8.0)

| | | | module\_presentation\_length > 241: Pass (12.0/1.0)

| | | highest\_education = A Level or Equivalent: Distinction (0.89)

| | | highest\_education = Post Graduate Qualification: Pass (0.0)

| | | highest\_education = No Formal quals: Pass (0.0)

| | imd\_band = 70-80%

| | | gender = M

| | | | disability = N: Distinction (14.45/2.69)

| | | | disability = Y

| | | | | highest\_education = HE Qualification: Withdrawn (0.0)

| | | | | highest\_education = Lower Than A Level: Withdrawn (10.0)

| | | | | highest\_education = A Level or Equivalent: Fail (10.0)

| | | | | highest\_education = Post Graduate Qualification: Withdrawn (0.0)

| | | | | highest\_education = No Formal quals: Withdrawn (0.0)

| | | gender = F: Pass (16.0)

| | imd\_band = 0-10%

| | | gender = M: Distinction (16.79/3.37)

| | | gender = F

| | | | module\_presentation\_length <= 241: Fail (4.0)

| | | | module\_presentation\_length > 241: Pass (5.0)

num\_of\_prev\_attempts > 0

| disability = N

| | num\_of\_prev\_attempts <= 1

| | | imd\_band = 80-90%: Pass (32.0)

| | | imd\_band = 30-40%

| | | | module\_presentation\_length <= 268

| | | | | weight <= 7.5: Pass (37.0/4.0)

| | | | | weight > 7.5

| | | | | | weight <= 17.5

| | | | | | | module\_presentation\_length <= 240

| | | | | | | | studied\_credits <= 90: Pass (4.0)

| | | | | | | | studied\_credits > 90: Fail (2.0)

| | | | | | | module\_presentation\_length > 240

| | | | | | | | module\_presentation\_length <= 262: Withdrawn (26.0/6.0)

| | | | | | | | module\_presentation\_length > 262: Fail (2.0)

| | | | | | weight > 17.5

| | | | | | | gender = M

| | | | | | | | highest\_education = HE Qualification: Withdrawn (2.0)

| | | | | | | | highest\_education = Lower Than A Level: Fail (3.0)

| | | | | | | | highest\_education = A Level or Equivalent

| | | | | | | | | studied\_credits <= 90: Pass (10.0)

| | | | | | | | | studied\_credits > 90: Fail (2.0)

| | | | | | | | highest\_education = Post Graduate Qualification: Pass (0.0)

| | | | | | | | highest\_education = No Formal quals: Pass (0.0)

| | | | | | | gender = F: Pass (8.0)

| | | | module\_presentation\_length > 268: Fail (12.0)

| | | imd\_band = 90-100%

| | | | gender = M

| | | | | highest\_education = HE Qualification: Fail (0.0)

| | | | | highest\_education = Lower Than A Level: Withdrawn (18.0)

| | | | | highest\_education = A Level or Equivalent: Fail (22.0)

| | | | | highest\_education = Post Graduate Qualification: Fail (0.0)

| | | | | highest\_education = No Formal quals: Fail (0.0)

| | | | gender = F: Pass (12.0)

| | | imd\_band = 20-30%: Pass (18.0)

| | | imd\_band = 50-60%

| | | | gender = M: Fail (4.0)

| | | | gender = F: Pass (20.0)

| | | imd\_band = 20-Oct

| | | | module\_presentation\_length <= 240

| | | | | gender = M: Pass (12.0)

| | | | | gender = F: Withdrawn (5.0)

| | | | module\_presentation\_length > 240: Withdrawn (56.0)

| | | imd\_band = 40-50%

| | | | studied\_credits <= 105

| | | | | module\_presentation\_length <= 241: Pass (18.0)

| | | | | module\_presentation\_length > 241

| | | | | | highest\_education = HE Qualification: Pass (14.0)

| | | | | | highest\_education = Lower Than A Level: Pass (0.0)

| | | | | | highest\_education = A Level or Equivalent: Fail (13.0)

| | | | | | highest\_education = Post Graduate Qualification: Pass (0.0)

| | | | | | highest\_education = No Formal quals: Pass (0.0)

| | | | studied\_credits > 105: Withdrawn (2.0)

| | | imd\_band = 60-70%

| | | | highest\_education = HE Qualification: Pass (32.0)

| | | | highest\_education = Lower Than A Level

| | | | | gender = M: Withdrawn (16.0)

| | | | | gender = F: Pass (11.0)

| | | | highest\_education = A Level or Equivalent: Pass (11.0)

| | | | highest\_education = Post Graduate Qualification: Pass (0.0)

| | | | highest\_education = No Formal quals: Pass (0.0)

| | | imd\_band = 70-80%

| | | | module\_presentation\_length <= 241: Fail (5.0)

| | | | module\_presentation\_length > 241: Withdrawn (2.0)

| | | imd\_band = 0-10%: Pass (0.0)

| | num\_of\_prev\_attempts > 1

| | | studied\_credits <= 120

| | | | imd\_band = 80-90%: Pass (8.0/1.0)

| | | | imd\_band = 30-40%: Fail (0.0)

| | | | imd\_band = 90-100%: Fail (18.0)

| | | | imd\_band = 20-30%: Withdrawn (8.0/4.0)

| | | | imd\_band = 50-60%: Fail (0.0)

| | | | imd\_band = 20-Oct: Fail (9.0)

| | | | imd\_band = 40-50%: Fail (13.0)

| | | | imd\_band = 60-70%: Fail (0.0)

| | | | imd\_band = 70-80%: Fail (0.0)

| | | | imd\_band = 0-10%

| | | | | highest\_education = HE Qualification: Fail (0.0)

| | | | | highest\_education = Lower Than A Level: Fail (12.0)

| | | | | highest\_education = A Level or Equivalent: Pass (10.0/1.0)

| | | | | highest\_education = Post Graduate Qualification: Fail (0.0)

| | | | | highest\_education = No Formal quals: Fail (0.0)

| | | studied\_credits > 120: Withdrawn (22.0)

| disability = Y

| | num\_of\_prev\_attempts <= 2

| | | highest\_education = HE Qualification: Withdrawn (0.0)

| | | highest\_education = Lower Than A Level: Withdrawn (36.0)

| | | highest\_education = A Level or Equivalent

| | | | imd\_band = 80-90%: Fail (0.0)

| | | | imd\_band = 30-40%: Fail (0.0)

| | | | imd\_band = 90-100%: Fail (0.0)

| | | | imd\_band = 20-30%: Fail (0.0)

| | | | imd\_band = 50-60%: Withdrawn (17.0/3.0)

| | | | imd\_band = 20-Oct: Fail (0.0)

| | | | imd\_band = 40-50%: Fail (0.0)

| | | | imd\_band = 60-70%: Fail (14.0)

| | | | imd\_band = 70-80%: Fail (0.0)

| | | | imd\_band = 0-10%: Fail (0.0)

| | | highest\_education = Post Graduate Qualification: Withdrawn (0.0)

| | | highest\_education = No Formal quals: Withdrawn (0.0)

| | num\_of\_prev\_attempts > 2: Fail (38.0)

Number of Leaves : 206

Size of the tree : 314

Time taken to build model: 0.27 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 2211 88.4754 %

Incorrectly Classified Instances 288 11.5246 %

Kappa statistic 0.8315

Mean absolute error 0.0762

Root mean squared error 0.1993

Relative absolute error 21.9308 %

Root relative squared error 47.8353 %

Total Number of Instances 2499

=== Detailed Accuracy By Class ===

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

0.977 0.099 0.883 0.977 0.928 0.871 0.977 0.962 Pass

0.793 0.050 0.854 0.793 0.822 0.760 0.960 0.912 Withdrawn

0.912 0.008 0.947 0.912 0.929 0.918 0.979 0.954 Fail

0.762 0.018 0.886 0.762 0.819 0.792 0.986 0.942 Distinction

Weighted Avg. 0.885 0.061 0.885 0.885 0.883 0.835 0.974 0.944

=== Confusion Matrix ===

a b c d <-- classified as

1060 20 2 3 | a = Pass

92 536 16 32 | b = Withdrawn

19 9 320 3 | c = Fail

29 63 0 295 | d = Distinction

**RandomForest**

Bagging with 100 iterations and base learner

weka.classifiers.trees.RandomTree -K 0 -M 1.0 -V 0.001 -S 1 -do-not-check-capabilities

Time taken to build model: 2.55 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 2200 88.0352 %

Incorrectly Classified Instances 299 11.9648 %

Kappa statistic 0.827

Mean absolute error 0.1013

Root mean squared error 0.2075

Relative absolute error 29.1558 %

Root relative squared error 49.7871 %

Total Number of Instances 2499

=== Detailed Accuracy By Class ===

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

0.933 0.077 0.903 0.933 0.917 0.853 0.980 0.974 Pass

0.814 0.055 0.846 0.814 0.830 0.768 0.967 0.923 Withdrawn

0.937 0.007 0.954 0.937 0.945 0.937 0.996 0.985 Fail

0.798 0.035 0.807 0.798 0.803 0.767 0.978 0.909 Distinction

Weighted Avg. 0.880 0.055 0.880 0.880 0.880 0.828 0.979 0.952

=== Confusion Matrix ===

a b c d <-- classified as

1012 44 7 22 | a = Pass

69 550 6 51 | b = Withdrawn

15 6 329 1 | c = Fail

25 50 3 309 | d = Distinction

**Decision Table:**

Number of training instances: 2499

Number of Rules : 273

Non matches covered by Majority class.

Best first.

Start set: no attributes

Search direction: forward

Stale search after 5 node expansions

Total number of subsets evaluated: 56

Merit of best subset found: 83.874

Evaluation (for feature selection): CV (leave one out)

Feature set: 2,4,5,6,7,8,10

Time taken to build model: 0.81 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 2147 85.9144 %

Incorrectly Classified Instances 352 14.0856 %

Kappa statistic 0.7942

Mean absolute error 0.1652

Root mean squared error 0.2324

Relative absolute error 47.5663 %

Root relative squared error 55.7696 %

Total Number of Instances 2499

=== Detailed Accuracy By Class ===

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

0.941 0.120 0.858 0.941 0.898 0.815 0.983 0.971 Pass

0.768 0.065 0.815 0.768 0.791 0.717 0.965 0.917 Withdrawn

0.869 0.004 0.974 0.869 0.919 0.908 0.993 0.968 Fail

0.780 0.027 0.841 0.780 0.810 0.777 0.989 0.944 Distinction

Weighted Avg. 0.859 0.074 0.860 0.859 0.858 0.796 0.981 0.952

=== Confusion Matrix ===

a b c d <-- classified as

1021 48 2 14 | a = Pass

108 519 6 43 | b = Withdrawn

33 13 305 0 | c = Fail

28 57 0 302 | d = Distinction

**PART decision list**

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 2192 87.7151 %

Incorrectly Classified Instances 307 12.2849 %

Kappa statistic 0.822

Mean absolute error 0.073

Root mean squared error 0.1983

Relative absolute error 21.0261 %

Root relative squared error 47.5761 %

Total Number of Instances 2499

=== Detailed Accuracy By Class ===

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

0.940 0.084 0.896 0.940 0.917 0.852 0.982 0.973 Pass

0.797 0.055 0.844 0.797 0.820 0.756 0.964 0.919 Withdrawn

0.917 0.009 0.944 0.917 0.931 0.920 0.980 0.961 Fail

0.804 0.033 0.818 0.804 0.811 0.777 0.981 0.902 Distinction

Weighted Avg. 0.877 0.058 0.876 0.877 0.876 0.824 0.977 0.946

=== Confusion Matrix ===

a b c d <-- classified as

1020 39 3 23 | a = Pass

80 539 16 41 | b = Withdrawn

13 11 322 5 | c = Fail

26 50 0 311 | d = Distinction