=== Run information ===

Scheme: weka.classifiers.trees.J48 -C 0.25 -M 2

Relation: agaricus-lepiota

Instances: 8124

Attributes: 23

class

cap\_shape

cap\_surface

cap\_color

bruises

odor

gill\_attachment

gill\_spacing

gill\_size

gill\_color

stalk\_shape

stalk\_root

stalk\_surface\_above\_ring

stalk\_surface\_below\_ring

stalk\_color\_above\_ring

stalk\_color\_below\_ring

veil\_type

veil\_color

ring\_number

ring\_type

spore\_print\_color

population

habitat

Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===

J48 pruned tree

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

odor = p: p (256.0)

odor = a: e (400.0)

odor = l: e (400.0)

odor = n

| spore\_print\_color = k: e (1296.0)

| spore\_print\_color = n: e (1344.0)

| spore\_print\_color = u: e (0.0)

| spore\_print\_color = h: e (48.0)

| spore\_print\_color = w

| | gill\_size = n

| | | gill\_spacing = c: p (32.0)

| | | gill\_spacing = w

| | | | population = s: e (0.0)

| | | | population = n: e (0.0)

| | | | population = a: e (0.0)

| | | | population = v: e (48.0)

| | | | population = y: e (0.0)

| | | | population = c: p (16.0)

| | gill\_size = b: e (528.0)

| spore\_print\_color = r: p (72.0)

| spore\_print\_color = o: e (48.0)

| spore\_print\_color = y: e (48.0)

| spore\_print\_color = b: e (48.0)

odor = f: p (2160.0)

odor = c: p (192.0)

odor = y: p (576.0)

odor = s: p (576.0)

odor = m: p (36.0)

Number of Leaves : 24

Size of the tree : 29

Time taken to build model: 0.06 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 8124 100 %

Incorrectly Classified Instances 0 0 %

Kappa statistic 1

Mean absolute error 0

Root mean squared error 0

Relative absolute error 0 %

Root relative squared error 0 %

Total Number of Instances 8124

=== Detailed Accuracy By Class ===

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

1 0 1 1 1 1 p

1 0 1 1 1 1 e

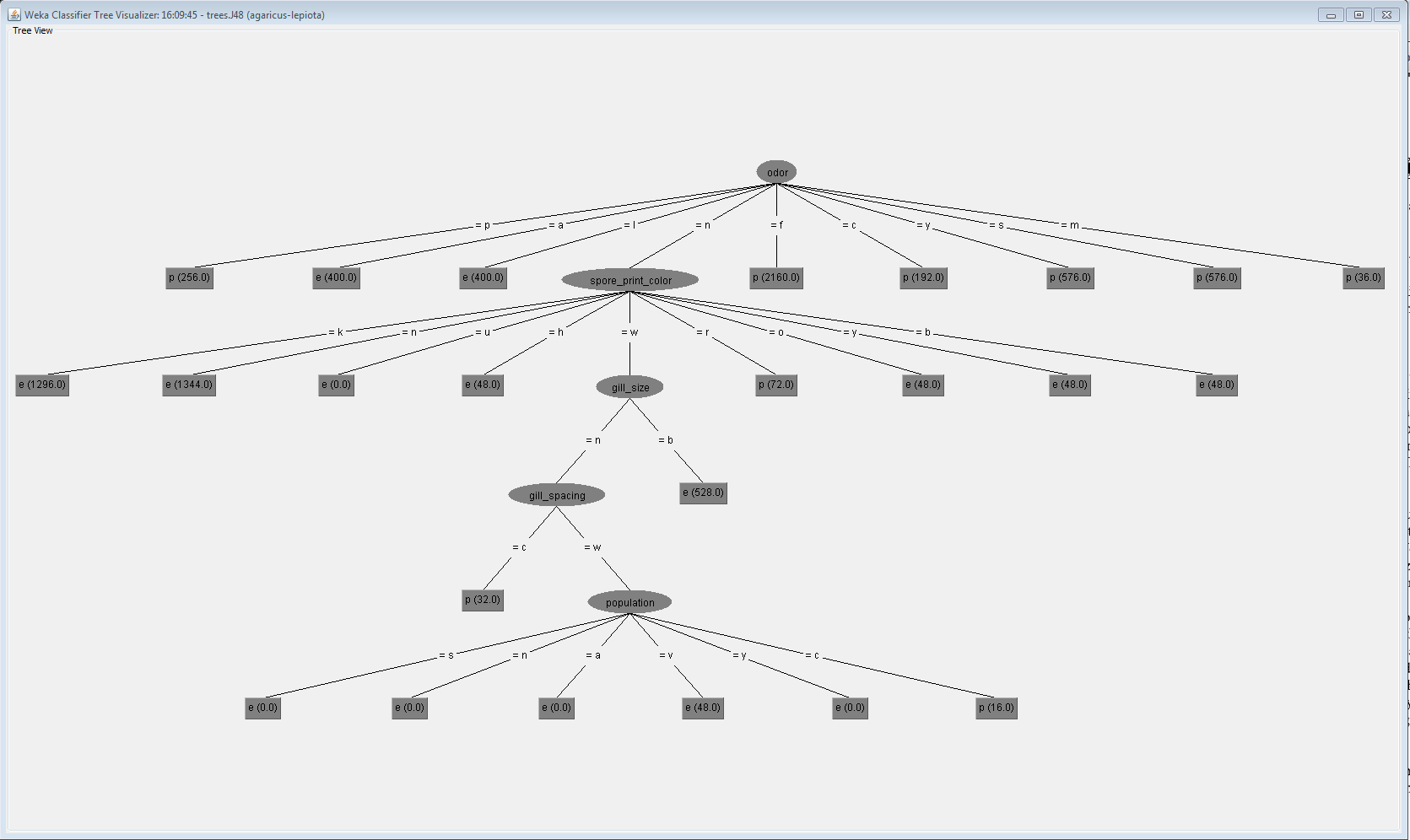
Weighted Avg. 1 0 1 1 1 1

=== Confusion Matrix ===

a b <-- classified as

3916 0 | a = p

0 4208 | b = e



=== Run information ===

Scheme: weka.classifiers.rules.JRip -F 3 -N 2.0 -O 2 -S 1

Relation: agaricus-lepiota

Instances: 8124

Attributes: 23

class

cap\_shape

cap\_surface

cap\_color

bruises

odor

gill\_attachment

gill\_spacing

gill\_size

gill\_color

stalk\_shape

stalk\_root

stalk\_surface\_above\_ring

stalk\_surface\_below\_ring

stalk\_color\_above\_ring

stalk\_color\_below\_ring

veil\_type

veil\_color

ring\_number

ring\_type

spore\_print\_color

population

habitat

Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===

JRIP rules:

===========

( odor = f) => class=p (2160.0/0.0)

( gill\_size = n) and ( gill\_color = b) => class=p (1152.0/0.0)

( gill\_size = n) and ( odor = p) => class=p (256.0/0.0)

( odor = c) => class=p (192.0/0.0)

( spore\_print\_color = r) => class=p (72.0/0.0)

( stalk\_surface\_below\_ring = y) and ( stalk\_surface\_above\_ring = k) => class=p (68.0/0.0)

( habitat = l) and ( cap\_color = w) => class=p (8.0/0.0)

( stalk\_color\_above\_ring = y) => class=p (8.0/0.0)

=> class=e (4208.0/0.0)

Number of Rules : 9

Time taken to build model: 0.25 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 8124 100 %

Incorrectly Classified Instances 0 0 %

Kappa statistic 1

Mean absolute error 0

Root mean squared error 0

Relative absolute error 0 %

Root relative squared error 0 %

Total Number of Instances 8124

=== Detailed Accuracy By Class ===

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

1 0 1 1 1 1 p

1 0 1 1 1 1 e

Weighted Avg. 1 0 1 1 1 1

=== Confusion Matrix ===

a b <-- classified as

3916 0 | a = p

0 4208 | b = e

=== Run information ===

Scheme: weka.classifiers.trees.J48 -C 0.25 -M 2

Relation: cars

Instances: 1728

Attributes: 7

buying

maint

doors

persons

lug\_boot

safety

classDistridution

Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===

J48 pruned tree

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

safety = low: unacc (576.0)

safety = med

| persons = 2: unacc (192.0)

| persons = 4

| | buying = vhigh

| | | maint = vhigh: unacc (12.0)

| | | maint = high: unacc (12.0)

| | | maint = med

| | | | lug\_boot = small: unacc (4.0)

| | | | lug\_boot = med: unacc (4.0/2.0)

| | | | lug\_boot = big: acc (4.0)

| | | maint = low

| | | | lug\_boot = small: unacc (4.0)

| | | | lug\_boot = med: unacc (4.0/2.0)

| | | | lug\_boot = big: acc (4.0)

| | buying = high

| | | lug\_boot = small: unacc (16.0)

| | | lug\_boot = med

| | | | doors = 2: unacc (4.0)

| | | | doors = 3: unacc (4.0)

| | | | doors = 4: acc (4.0/1.0)

| | | | doors = 5more: acc (4.0/1.0)

| | | lug\_boot = big

| | | | maint = vhigh: unacc (4.0)

| | | | maint = high: acc (4.0)

| | | | maint = med: acc (4.0)

| | | | maint = low: acc (4.0)

| | buying = med

| | | maint = vhigh

| | | | lug\_boot = small: unacc (4.0)

| | | | lug\_boot = med: unacc (4.0/2.0)

| | | | lug\_boot = big: acc (4.0)

| | | maint = high

| | | | lug\_boot = small: unacc (4.0)

| | | | lug\_boot = med: unacc (4.0/2.0)

| | | | lug\_boot = big: acc (4.0)

| | | maint = med: acc (12.0)

| | | maint = low

| | | | lug\_boot = small: acc (4.0)

| | | | lug\_boot = med: acc (4.0/2.0)

| | | | lug\_boot = big: good (4.0)

| | buying = low

| | | maint = vhigh

| | | | lug\_boot = small: unacc (4.0)

| | | | lug\_boot = med: unacc (4.0/2.0)

| | | | lug\_boot = big: acc (4.0)

| | | maint = high: acc (12.0)

| | | maint = med

| | | | lug\_boot = small: acc (4.0)

| | | | lug\_boot = med: acc (4.0/2.0)

| | | | lug\_boot = big: good (4.0)

| | | maint = low

| | | | lug\_boot = small: acc (4.0)

| | | | lug\_boot = med: acc (4.0/2.0)

| | | | lug\_boot = big: good (4.0)

| persons = more

| | lug\_boot = small

| | | buying = vhigh: unacc (16.0)

| | | buying = high: unacc (16.0)

| | | buying = med

| | | | maint = vhigh: unacc (4.0)

| | | | maint = high: unacc (4.0)

| | | | maint = med: acc (4.0/1.0)

| | | | maint = low: acc (4.0/1.0)

| | | buying = low

| | | | maint = vhigh: unacc (4.0)

| | | | maint = high: acc (4.0/1.0)

| | | | maint = med: acc (4.0/1.0)

| | | | maint = low: acc (4.0/1.0)

| | lug\_boot = med

| | | buying = vhigh

| | | | maint = vhigh: unacc (4.0)

| | | | maint = high: unacc (4.0)

| | | | maint = med: acc (4.0/1.0)

| | | | maint = low: acc (4.0/1.0)

| | | buying = high

| | | | maint = vhigh: unacc (4.0)

| | | | maint = high: acc (4.0/1.0)

| | | | maint = med: acc (4.0/1.0)

| | | | maint = low: acc (4.0/1.0)

| | | buying = med: acc (16.0/5.0)

| | | buying = low

| | | | maint = vhigh: acc (4.0/1.0)

| | | | maint = high: acc (4.0)

| | | | maint = med: good (4.0/1.0)

| | | | maint = low: good (4.0/1.0)

| | lug\_boot = big

| | | buying = vhigh

| | | | maint = vhigh: unacc (4.0)

| | | | maint = high: unacc (4.0)

| | | | maint = med: acc (4.0)

| | | | maint = low: acc (4.0)

| | | buying = high

| | | | maint = vhigh: unacc (4.0)

| | | | maint = high: acc (4.0)

| | | | maint = med: acc (4.0)

| | | | maint = low: acc (4.0)

| | | buying = med

| | | | maint = vhigh: acc (4.0)

| | | | maint = high: acc (4.0)

| | | | maint = med: acc (4.0)

| | | | maint = low: good (4.0)

| | | buying = low

| | | | maint = vhigh: acc (4.0)

| | | | maint = high: acc (4.0)

| | | | maint = med: good (4.0)

| | | | maint = low: good (4.0)

safety = high

| persons = 2: unacc (192.0)

| persons = 4

| | buying = vhigh

| | | maint = vhigh: unacc (12.0)

| | | maint = high: unacc (12.0)

| | | maint = med: acc (12.0)

| | | maint = low: acc (12.0)

| | buying = high

| | | maint = vhigh: unacc (12.0)

| | | maint = high: acc (12.0)

| | | maint = med: acc (12.0)

| | | maint = low: acc (12.0)

| | buying = med

| | | maint = vhigh: acc (12.0)

| | | maint = high: acc (12.0)

| | | maint = med

| | | | lug\_boot = small: acc (4.0)

| | | | lug\_boot = med: acc (4.0/2.0)

| | | | lug\_boot = big: vgood (4.0)

| | | maint = low

| | | | lug\_boot = small: good (4.0)

| | | | lug\_boot = med: good (4.0/2.0)

| | | | lug\_boot = big: vgood (4.0)

| | buying = low

| | | maint = vhigh: acc (12.0)

| | | maint = high

| | | | lug\_boot = small: acc (4.0)

| | | | lug\_boot = med: acc (4.0/2.0)

| | | | lug\_boot = big: vgood (4.0)

| | | maint = med

| | | | lug\_boot = small: good (4.0)

| | | | lug\_boot = med: good (4.0/2.0)

| | | | lug\_boot = big: vgood (4.0)

| | | maint = low

| | | | lug\_boot = small: good (4.0)

| | | | lug\_boot = med: good (4.0/2.0)

| | | | lug\_boot = big: vgood (4.0)

| persons = more

| | buying = vhigh

| | | maint = vhigh: unacc (12.0)

| | | maint = high: unacc (12.0)

| | | maint = med: acc (12.0/1.0)

| | | maint = low: acc (12.0/1.0)

| | buying = high

| | | maint = vhigh: unacc (12.0)

| | | maint = high: acc (12.0/1.0)

| | | maint = med: acc (12.0/1.0)

| | | maint = low: acc (12.0/1.0)

| | buying = med

| | | maint = vhigh: acc (12.0/1.0)

| | | maint = high: acc (12.0/1.0)

| | | maint = med

| | | | lug\_boot = small: acc (4.0/1.0)

| | | | lug\_boot = med: vgood (4.0/1.0)

| | | | lug\_boot = big: vgood (4.0)

| | | maint = low

| | | | lug\_boot = small: good (4.0/1.0)

| | | | lug\_boot = med: vgood (4.0/1.0)

| | | | lug\_boot = big: vgood (4.0)

| | buying = low

| | | maint = vhigh: acc (12.0/1.0)

| | | maint = high

| | | | lug\_boot = small: acc (4.0/1.0)

| | | | lug\_boot = med: vgood (4.0/1.0)

| | | | lug\_boot = big: vgood (4.0)

| | | maint = med

| | | | lug\_boot = small: good (4.0/1.0)

| | | | lug\_boot = med: vgood (4.0/1.0)

| | | | lug\_boot = big: vgood (4.0)

| | | maint = low

| | | | lug\_boot = small: good (4.0/1.0)

| | | | lug\_boot = med: vgood (4.0/1.0)

| | | | lug\_boot = big: vgood (4.0)

Number of Leaves : 131

Size of the tree : 182

Time taken to build model: 0.05 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 1596 92.3611 %

Incorrectly Classified Instances 132 7.6389 %

Kappa statistic 0.8343

Mean absolute error 0.0421

Root mean squared error 0.1718

Relative absolute error 18.3833 %

Root relative squared error 50.8176 %

Total Number of Instances 1728

=== Detailed Accuracy By Class ===

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

0.962 0.064 0.972 0.962 0.967 0.983 unacc

0.867 0.047 0.841 0.867 0.854 0.962 acc

0.609 0.011 0.689 0.609 0.646 0.918 good

0.877 0.01 0.77 0.877 0.82 0.995 vgood

Weighted Avg. 0.924 0.056 0.924 0.924 0.924 0.976

=== Confusion Matrix ===

a b c d <-- classified as

1164 43 3 0 | a = unacc

33 333 11 7 | b = acc

0 17 42 10 | c = good

0 3 5 57 | d = vgood

=== Run information ===

Scheme: weka.classifiers.rules.JRip -F 3 -N 2.0 -O 2 -S 1

Relation: cars

Instances: 1728

Attributes: 7

buying

maint

doors

persons

lug\_boot

safety

classDistridution

Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===

JRIP rules:

===========

(safety = high) and (buying = low) and (lug\_boot = big) and (persons = 4) => classDistridution=vgood (16.0/4.0)

(safety = high) and (persons = more) and (buying = low) and (lug\_boot = big) => classDistridution=vgood (16.0/4.0)

(safety = high) and (buying = med) and (lug\_boot = big) and (maint = low) and (persons = 4) => classDistridution=vgood (4.0/0.0)

(safety = high) and (buying = med) and (maint = med) and (persons = 4) and (lug\_boot = big) => classDistridution=vgood (4.0/0.0)

(safety = high) and (lug\_boot = med) and (persons = more) and (buying = low) => classDistridution=vgood (16.0/7.0)

(safety = high) and (buying = med) and (maint = low) and (persons = more) and (lug\_boot = big) => classDistridution=vgood (4.0/0.0)

(safety = high) and (lug\_boot = med) and (buying = med) and (maint = med) and (persons = more) => classDistridution=vgood (4.0/1.0)

(safety = high) and (buying = med) and (maint = med) and (persons = more) and (lug\_boot = big) => classDistridution=vgood (4.0/0.0)

(safety = high) and (lug\_boot = med) and (persons = 4) and (buying = low) and (doors = 4) => classDistridution=vgood (4.0/1.0)

(maint = low) and (buying = med) and (safety = med) and (lug\_boot = big) and (persons = 4) => classDistridution=good (4.0/0.0)

(buying = low) and (maint = low) and (safety = med) and (lug\_boot = big) and (persons = more) => classDistridution=good (4.0/0.0)

(buying = low) and (persons = 4) and (maint = med) and (safety = high) => classDistridution=good (7.0/1.0)

(maint = low) and (buying = med) and (safety = high) and (persons = 4) => classDistridution=good (8.0/2.0)

(maint = low) and (buying = med) and (persons = more) and (safety = med) => classDistridution=good (12.0/5.0)

(buying = low) and (maint = med) and (safety = med) and (lug\_boot = big) and (persons = 4) => classDistridution=good (4.0/0.0)

(buying = low) and (maint = low) and (persons = 4) and (safety = med) and (lug\_boot = big) => classDistridution=good (4.0/0.0)

(maint = low) and (buying = low) and (safety = high) and (persons = 4) => classDistridution=good (7.0/1.0)

(buying = low) and (persons = more) and (maint = med) and (safety = med) => classDistridution=good (12.0/5.0)

(maint = low) and (persons = more) and (buying = low) and (safety = high) => classDistridution=good (4.0/1.0)

(buying = low) and (maint = med) and (persons = more) and (safety = high) => classDistridution=good (4.0/1.0)

(safety = high) and (persons = 4) and (buying = med) => classDistridution=acc (32.0/2.0)

(safety = high) and (persons = more) and (maint = med) => classDistridution=acc (28.0/3.0)

(safety = med) and (persons = 4) and (buying = low) => classDistridution=acc (40.0/10.0)

(safety = med) and (persons = more) and (lug\_boot = big) and (maint = med) => classDistridution=acc (12.0/0.0)

(safety = high) and (persons = 4) and (maint = low) => classDistridution=acc (24.0/0.0)

(safety = med) and (persons = 4) and (lug\_boot = big) and (buying = med) => classDistridution=acc (12.0/0.0)

(persons = 4) and (safety = high) and (maint = med) => classDistridution=acc (24.0/0.0)

(persons = more) and (safety = med) and (lug\_boot = big) and (buying = med) => classDistridution=acc (8.0/0.0)

(safety = med) and (persons = 4) and (maint = med) and (buying = med) => classDistridution=acc (8.0/0.0)

(persons = more) and (safety = high) and (buying = med) and (maint = vhigh) => classDistridution=acc (12.0/1.0)

(safety = med) and (persons = more) and (lug\_boot = big) and (maint = low) => classDistridution=acc (8.0/0.0)

(safety = med) and (persons = 4) and (lug\_boot = big) and (maint = low) => classDistridution=acc (8.0/0.0)

(persons = more) and (safety = high) and (buying = high) and (maint = low) => classDistridution=acc (12.0/1.0)

(persons = more) and (safety = med) and (lug\_boot = med) => classDistridution=acc (56.0/23.0)

(safety = high) and (maint = high) and (buying = high) and (persons = 4) => classDistridution=acc (12.0/0.0)

(persons = more) and (safety = high) and (maint = high) and (buying = med) => classDistridution=acc (12.0/1.0)

(safety = med) and (persons = 4) and (maint = low) and (buying = med) => classDistridution=acc (8.0/2.0)

(persons = more) and (safety = high) and (maint = low) and (buying = vhigh) => classDistridution=acc (12.0/1.0)

(safety = med) and (persons = 4) and (lug\_boot = med) and (doors = 4) => classDistridution=acc (10.0/3.0)

(persons = more) and (safety = med) and (buying = low) => classDistridution=acc (20.0/6.0)

(safety = high) and (buying = low) and (persons = 4) => classDistridution=acc (14.0/1.0)

(maint = high) and (buying = high) and (persons = more) and (safety = high) => classDistridution=acc (12.0/1.0)

(safety = med) and (persons = 4) and (doors = 5more) and (lug\_boot = med) => classDistridution=acc (10.0/3.0)

(safety = med) and (persons = 4) and (lug\_boot = big) and (maint = med) => classDistridution=acc (8.0/0.0)

(persons = more) and (safety = high) and (buying = low) => classDistridution=acc (8.0/2.0)

(safety = med) and (lug\_boot = big) and (maint = high) and (buying = high) and (persons = 4) => classDistridution=acc (4.0/0.0)

(persons = more) and (safety = med) and (buying = high) and (maint = high) and (lug\_boot = big) => classDistridution=acc (4.0/0.0)

(maint = med) and (persons = more) and (safety = med) and (buying = med) => classDistridution=acc (4.0/1.0)

=> classDistridution=unacc (1164.0/7.0)

Number of Rules : 49

Time taken to build model: 0.52 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 1494 86.4583 %

Incorrectly Classified Instances 234 13.5417 %

Kappa statistic 0.7216

Mean absolute error 0.0846

Root mean squared error 0.224

Relative absolute error 36.9616 %

Root relative squared error 66.2639 %

Total Number of Instances 1728

=== Detailed Accuracy By Class ===

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

0.893 0.056 0.974 0.893 0.931 0.952 unacc

0.867 0.105 0.703 0.867 0.776 0.928 acc

0.565 0.02 0.542 0.565 0.553 0.939 good

0.646 0.019 0.575 0.646 0.609 0.967 vgood

Weighted Avg. 0.865 0.064 0.881 0.865 0.87 0.947

=== Confusion Matrix ===

a b c d <-- classified as

1080 101 18 11 | a = unacc

27 333 7 17 | b = acc

0 27 39 3 | c = good

2 13 8 42 | d = vgood