EVALUATING ACCURACY OF THE CLASSIFIERS
LOGISTICS REGRESSIONS
=== Run information ===
Scheme:weka.classifiers.functions.Logistic -R 1.0E-8 -M -1
Relation: german_credit
Instances: 1000
Attributes: 21
          checking_status
          duration
          credit_history
          purpose
          credit_amount
          savings_status
          employment
          installment_commitment
          personal_status
          other_parties
          residence_since
          property_magnitude
          age
          other_payment_plans
          housing
          existing_credits
          job
          num_dependents
          own_telephone
          foreign_worker
          class
Test mode:10-fold cross-validation

=== Classifier model (full training set) ===
Logistic Regression with ridge parameter of 1.0E-8
Coefficients...

Variable	Class good
checking_status=<0	-0.778
checking_status=0<=X<200	-0.4032
checking_status=>=200	0.1877
checking_status=no checking	0.9338
duration	-0.0279
credit_history=no credits/all paid	-0.8129
credit_history=all paid	-0.9562

credit_history=existing paid	-0.2268
credit_history=delayed previously	0.0403
credit_history=critical/other existing credit	0.6229
purpose=new car	-0.692
purpose=used car	0.9744
purpose=furniture/equipment	0.0996
purpose=radio/tv	0.1996
purpose=domestic appliance	-0.1692
purpose=repairs	-0.4756
purpose=education	-0.7283
purpose=vacation	0
purpose=retraining	1.3674
purpose=business	0.0481
purpose=other	0.7968
credit_amount	-0.0001
savings_status=<100	-0.4402
savings_status=100<=X<500	-0.0825
savings_status=500<=X<1000	-0.0641
savings_status=>=1000	0.8989
savings_status=no known savings	0.5065
employment=unemployed	-0.2934
employment=<1	-0.2265
employment=1<=X<4	-0.1106
employment=4<=X<7	0.5376
employment=>=7	-0.0168
installment_commitment	-0.3301
personal_status=male div/sep	-0.4923
personal_status=female div/dep/mar	-0.2168
personal_status=male single	0.3238
personal_status=male mar/wid	-0.1252
personal_status=female single	0
other_parties=none	-0.1798
other_parties=co applicant	-0.6158
other_parties=guarantor	0.7988
residence_since	-0.0048
property_magnitude=real estate	0.2572
property_magnitude=life insurance	-0.0242
property_magnitude=car	0.0627
property_magnitude=no known property	-0.4732
age	0.0145
other_payment_plans=bank	-0.3273
other_payment_plans=stores	-0.2041
other_payment_plans=none	0.3191

housing=rent	-0.3498
housing=own	0.0939
housing=for free	0.3341
existing_credits	-0.2721
job=unemp/unskilled non res	0.5095
job=unskilled resident	-0.0265
job=skilled	-0.0451
job=high qualif/self emp/mgmt	0.0301
num_dependents	-0.2647
own_telephone	0.3
foreign_worker	1.3922
Intercept	3.1983

Odds Ratios...

	Class
Variable	good
===	
checking_status=<0	0.4593
checking_status=0<=X<200	0.6682
checking_status=>=200	1.2064
checking_status=no checking	2.5443
duration	0.9725
credit_history=no credits/all paid	0.4436
credit_history=all paid	0.3843
credit_history=existing paid	0.7971
credit_history=delayed previously	1.0411
credit_history=critical/other existing credit	1.8643
purpose=new car	0.5006
purpose=used car	2.6497
purpose=furniture/equipment	1.1047
purpose=radio/tv	1.2209
purpose=domestic appliance	0.8443
purpose=repairs	0.6215
purpose=education	0.4827
purpose=vacation	1
purpose=retraining	3.9251
purpose=business	1.0493
purpose=other	2.2184
credit_amount	0.9999
savings_status=<100	0.6439
savings_status=100<=X<500	0.9208
savings_status=500<=X<1000	0.9379
savings_status=>=1000	2.4569

savings_status=no known savings	1.6594
employment=unemployed	0.7457
employment=<1	0.7973
employment=1<=X<4	0.8953
employment=4<=X<7	1.7119
employment=>=7	0.9834
installment_commitment	0.7189
personal_status=male div/sep	0.6112
personal_status=female div/dep/mar	0.8051
personal_status=male single	1.3824
personal_status=male mar/wid	0.8823
personal_status=female single	1
other_parties=none	0.8354
other_parties=co applicant	0.5402
other_parties=guarantor	2.2229
residence_since	0.9952
property_magnitude=real estate	1.2933
property_magnitude=life insurance	0.9761
property_magnitude=car	1.0647
property_magnitude=no known property	0.623
age	1.0146
other_payment_plans=bank	0.7209
other_payment_plans=stores	0.8154
other_payment_plans=none	1.3758
housing=rent	0.7049
housing=own	1.0984
housing=for free	1.3967
existing_credits	0.7618
job=unemp/unskilled non res	1.6645
job=unskilled resident	0.9738
job=skilled	0.9559
job=high qualif/self emp/mgmt	1.0306
num_dependents	0.7675
own_telephone	1.3499
foreign_worker	4.0237

Time taken to build model: 0.09 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances	752	75.2	%
Incorrectly Classified Instances	248	24.8	%
Kappa statistic	0.375		
Mean absolute error	0.3098		
Root mean squared error	0.4087		

Relative absolute error   73.727 %
Root relative squared error   89.1751 %
Total Number of Instances   1000
=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area	Class
	0.864	0.51	0.798	0.864	0.83	0.785	good
	0.49	0.136	0.607	0.49	0.542	0.785	bad
Weighted Avg.	0.752	0.398	0.741	0.752	0.744	0.785	

=== Confusion Matrix ===

```
  a   b   <-- classified as
 605  95 |   a = good
 153 147 |   b = bad
```

NAVIVE BAYES ALGORITHM
=== Run information ===
Scheme:weka.classifiers.bayes.NaiveBayes
Relation: german_credit
Instances: 1000
Attributes: 21
            checking_status
            duration
            credit_history
            purpose
            credit_amount
            savings_status
            employment
            installment_commitment
            personal_status
            other_parties
            residence_since
            property_magnitude
            age
            other_payment_plans
            housing
            existing_credits
            job
            num_dependents
            own_telephone
            foreign_worker
            class
Test mode:10-fold cross-validation

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

Naive Bayes Classifier

Attribute	Class good (0.7)	bad (0.3)
==		
checking_status		
<0	140.0	136.0
0<=X<200	165.0	106.0
>=200	50.0	15.0
no checking	349.0	47.0
[total]	704.0	304.0
duration		
mean	19.1766	24.8129
std. dev.	10.9817	13.3608
weight sum	700	300
precision	2.125	2.125
credit_history		
no credits/all paid	16.0	26.0
all paid	22.0	29.0
existing paid	362.0	170.0
delayed previously	61.0	29.0
critical/other existing credit	244.0	51.0
[total]	705.0	305.0
purpose		
new car	146.0	90.0
used car	87.0	18.0
furniture/equipment	124.0	59.0
radio/tv	219.0	63.0
domestic appliance	9.0	5.0
repairs	15.0	9.0
education	29.0	23.0
vacation	1.0	1.0
retraining	9.0	2.0
business	64.0	35.0
other	8.0	6.0
[total]	711.0	311.0
credit_amount		
mean	2985.6721	3938.1609
std. dev.	2399.7801	3529.4788
weight sum	700	300
precision	19.7543	19.7543
savings_status		

<100	387.0	218.0
100<=X<500	70.0	35.0
500<=X<1000	53.0	12.0
>=1000	43.0	7.0
no known savings	152.0	33.0
[total]	705.0	305.0
employment		
unemployed	40.0	24.0
<1	103.0	71.0
1<=X<4	236.0	105.0
4<=X<7	136.0	40.0
>=7	190.0	65.0
[total]	705.0	305.0
installment_commitment		
mean	2.92	3.0967
std. dev.	1.1273	1.0866
weight sum	700	300
precision	1	1
personal_status		
male div/sep	31.0	21.0
female div/dep/mar	202.0	110.0
male single	403.0	147.0
male mar/wid	68.0	26.0
female single	1.0	1.0
[total]	705.0	305.0
other_parties		
none	636.0	273.0
co applicant	24.0	19.0
guarantor	43.0	11.0
[total]	703.0	303.0
residence_since		
mean	2.8429	2.85
std. dev.	1.1076	1.0928
weight sum	700	300
precision	1	1
property_magnitude		
real estate	223.0	61.0
life insurance	162.0	72.0
car	231.0	103.0
no known property	88.0	68.0
[total]	704.0	304.0
age		
mean	36.1723	33.9267

std. dev.	11.4005	11.259
weight sum	700	300
precision	1.0769	1.0769
other_payment_plans		
bank	83.0	58.0
stores	29.0	20.0
none	591.0	225.0
[total]	703.0	303.0
housing		
rent	110.0	71.0
own	528.0	187.0
for free	65.0	45.0
[total]	703.0	303.0
existing_credits		
mean	1.4243	1.3667
std. dev.	0.5843	0.5588
weight sum	700	300
precision	1	1
job		
unemp/unskilled non res	16.0	8.0
unskilled resident	145.0	57.0
skilled	445.0	187.0
high qualif/self emp/mgmt	98.0	52.0
[total]	704.0	304.0
num_dependents		
mean	1.1557	1.1533
std. dev.	0.3626	0.3603
weight sum	700	300
precision	1	1
own_telephone		
none	410.0	188.0
yes	292.0	114.0
[total]	702.0	302.0
foreign_worker		
yes	668.0	297.0
no	34.0	5.0
[total]	702.0	302.0

Time taken to build model: 0 seconds
=== Stratified cross-validation ===
=== Summary ===

```
Correctly Classified Instances        754              75.4   %
Incorrectly Classified Instances      246              24.6   %
Kappa statistic                  0.3813
Mean absolute error              0.2936
Root mean squared error           0.4201
Relative absolute error          69.8801 %
Root relative squared error       91.6718 %
Total Number of Instances         1000
```

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area	Class
	0.864	0.503	0.8	0.864	0.831	0.787	good
	0.497	0.136	0.611	0.497	0.548	0.787	bad
Weighted Avg.	0.754	0.393	0.743	0.754	0.746	0.787	

=== Confusion Matrix ===

```
  a   b   <-- classified as
 605  95 |   a = good
 151 149 |   b = bad
```

TREE- J48
=== Run information ===

Scheme:weka.classifiers.trees.J48 -C 0.25 -M 2
Relation: german_credit
Instances: 1000
Attributes: 21
            checking_status
            duration
            credit_history
            purpose
            credit_amount
            savings_status
            employment
            installment_commitment
            personal_status
            other_parties
            residence_since
            property_magnitude
            age
            other_payment_plans
            housing
            existing_credits

job
        num_dependents
        own_telephone
        foreign_worker
        class
Test mode:10-fold cross-validation

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

J48 pruned tree
----

checking_status = <0
| foreign_worker = yes
| | duration <= 11
| | | existing_credits <= 1
| | | | property_magnitude = real estate: good (8.0/1.0)
| | | | property_magnitude = life insurance
| | | | | own_telephone = none: bad (2.0)
| | | | | own_telephone = yes: good (4.0)
| | | | property_magnitude = car: good (2.0/1.0)
| | | | property_magnitude = no known property: bad (3.0)
| | | existing_credits > 1: good (14.0)
| | duration > 11
| | | job = unemp/unskilled non res: bad (5.0/1.0)
| | | job = unskilled resident
| | | | purpose = new car
| | | | | own_telephone = none: bad (10.0/2.0)
| | | | | own_telephone = yes: good (2.0)
| | | | purpose = used car: bad (1.0)
| | | | purpose = furniture/equipment
| | | | | employment = unemployed: good (0.0)
| | | | | employment = <1: bad (3.0)
| | | | | employment = 1<=X<4: good (4.0)
| | | | | employment = 4<=X<7: good (1.0)
| | | | | employment = >=7: good (2.0)
| | | | purpose = radio/tv
| | | | | existing_credits <= 1: bad (10.0/3.0)
| | | | | existing_credits > 1: good (2.0)
| | | | purpose = domestic appliance: bad (1.0)
| | | | purpose = repairs: bad (1.0)
| | | | purpose = education: bad (1.0)
| | | | purpose = vacation: bad (0.0)

```
|   |   |   |   purpose = retraining: good (1.0)
|   |   |   |   purpose = business: good (3.0)
|   |   |   |   purpose = other: good (1.0)
|   |   |   job = skilled
|   |   |   |   other_parties = none
|   |   |   |   |   duration <= 30
|   |   |   |   |   |   savings_status = <100
|   |   |   |   |   |   |   credit_history = no credits/all paid: bad (8.0/1.0)
|   |   |   |   |   |   |   credit_history = all paid: bad (6.0)
|   |   |   |   |   |   |   credit_history = existing paid
|   |   |   |   |   |   |   |   own_telephone = none
|   |   |   |   |   |   |   |   |   existing_credits <= 1
|   |   |   |   |   |   |   |   |   |   property_magnitude = real estate
|   |   |   |   |   |   |   |   |   |   |   age <= 26: bad (5.0)
|   |   |   |   |   |   |   |   |   |   |   age > 26: good (2.0)
|   |   |   |   |   |   |   |   |   |   property_magnitude = life insurance: bad (7.0/2.0)
|   |   |   |   |   |   |   |   |   |   property_magnitude = car
|   |   |   |   |   |   |   |   |   |   |   credit_amount <= 1386: bad (3.0)
|   |   |   |   |   |   |   |   |   |   |   credit_amount > 1386: good (11.0/1.0)
|   |   |   |   |   |   |   |   |   |   property_magnitude = no known property: good (2.0)
|   |   |   |   |   |   |   |   |   existing_credits > 1: bad (3.0)
|   |   |   |   |   |   |   |   own_telephone = yes: bad (5.0)
|   |   |   |   |   |   |   credit_history = delayed previously: bad (4.0)
|   |   |   |   |   |   |   credit_history = critical/other existing credit: good (14.0/4.0)
|   |   |   |   |   |   savings_status = 100<=X<500
|   |   |   |   |   |   |   credit_history = no credits/all paid: good (0.0)
|   |   |   |   |   |   |   credit_history = all paid: good (1.0)
|   |   |   |   |   |   |   credit_history = existing paid: bad (3.0)
|   |   |   |   |   |   |   credit_history = delayed previously: good (0.0)
|   |   |   |   |   |   |   credit_history = critical/other existing credit: good (2.0)
|   |   |   |   |   |   savings_status = 500<=X<1000: good (4.0/1.0)
|   |   |   |   |   |   savings_status = >=1000: good (4.0)
|   |   |   |   |   |   savings_status = no known savings
|   |   |   |   |   |   |   existing_credits <= 1
|   |   |   |   |   |   |   |   own_telephone = none: bad (9.0/1.0)
|   |   |   |   |   |   |   |   own_telephone = yes: good (4.0/1.0)
|   |   |   |   |   |   |   existing_credits > 1: good (2.0)
|   |   |   |   |   duration > 30: bad (30.0/3.0)
|   |   |   |   other_parties = co applicant: bad (7.0/1.0)
|   |   |   |   other_parties = guarantor: good (12.0/3.0)
|   |   |   job = high qualif/self emp/mgmt: good (30.0/8.0)
|   foreign_worker = no: good (15.0/2.0)
checking_status = 0<=X<200
```

```
|   credit_amount <= 9857
|   |   savings_status = <100
|   |   |   other_parties = none
|   |   |   |   duration <= 42
|   |   |   |   |   personal_status = male div/sep: bad (8.0/2.0)
|   |   |   |   |   personal_status = female div/dep/mar
|   |   |   |   |   |   purpose = new car: bad (5.0/1.0)
|   |   |   |   |   |   purpose = used car: bad (1.0)
|   |   |   |   |   |   purpose = furniture/equipment
|   |   |   |   |   |   |   duration <= 10: bad (3.0)
|   |   |   |   |   |   |   duration > 10
|   |   |   |   |   |   |   |   duration <= 21: good (6.0/1.0)
|   |   |   |   |   |   |   |   duration > 21: bad (2.0)
|   |   |   |   |   |   purpose = radio/tv: good (8.0/2.0)
|   |   |   |   |   |   purpose = domestic appliance: good (0.0)
|   |   |   |   |   |   purpose = repairs: good (1.0)
|   |   |   |   |   |   purpose = education: good (4.0/2.0)
|   |   |   |   |   |   purpose = vacation: good (0.0)
|   |   |   |   |   |   purpose = retraining: good (0.0)
|   |   |   |   |   |   purpose = business
|   |   |   |   |   |   |   residence_since <= 2: good (3.0)
|   |   |   |   |   |   |   residence_since > 2: bad (2.0)
|   |   |   |   |   |   purpose = other: good (0.0)
|   |   |   |   |   personal_status = male single: good (52.0/15.0)
|   |   |   |   |   personal_status = male mar/wid
|   |   |   |   |   |   duration <= 10: good (6.0)
|   |   |   |   |   |   duration > 10: bad (10.0/3.0)
|   |   |   |   |   personal_status = female single: good (0.0)
|   |   |   |   duration > 42: bad (7.0)
|   |   |   other_parties = co applicant: good (2.0)
|   |   |   other_parties = guarantor
|   |   |   |   purpose = new car: bad (2.0)
|   |   |   |   purpose = used car: good (0.0)
|   |   |   |   purpose = furniture/equipment: good (0.0)
|   |   |   |   purpose = radio/tv: good (18.0/1.0)
|   |   |   |   purpose = domestic appliance: good (0.0)
|   |   |   |   purpose = repairs: good (0.0)
|   |   |   |   purpose = education: good (0.0)
|   |   |   |   purpose = vacation: good (0.0)
|   |   |   |   purpose = retraining: good (0.0)
|   |   |   |   purpose = business: good (0.0)
|   |   |   |   purpose = other: good (0.0)
|   |   savings_status = 100<=X<500
```

```
|  |  |   purpose = new car: bad (15.0/5.0)
|  |  |   purpose = used car: good (3.0)
|  |  |   purpose = furniture/equipment: bad (4.0/1.0)
|  |  |   purpose = radio/tv: bad (8.0/2.0)
|  |  |   purpose = domestic appliance: good (0.0)
|  |  |   purpose = repairs: good (2.0)
|  |  |   purpose = education: good (0.0)
|  |  |   purpose = vacation: good (0.0)
|  |  |   purpose = retraining: good (0.0)
|  |  |   purpose = business
|  |  |  |   housing = rent
|  |  |  |  |   existing_credits <= 1: good (2.0)
|  |  |  |  |   existing_credits > 1: bad (2.0)
|  |  |  |   housing = own: good (6.0)
|  |  |  |   housing = for free: bad (1.0)
|  |  |   purpose = other: good (1.0)
|  |   savings_status = 500<=X<1000: good (11.0/3.0)
|  |   savings_status = >=1000: good (13.0/3.0)
|  |   savings_status = no known savings: good (41.0/5.0)
|   credit_amount > 9857: bad (20.0/3.0)
checking_status = >=200: good (63.0/14.0)
checking_status = no checking: good (394.0/46.0)
Number of Leaves  :   103
Size of the tree :      140
```

Time taken to build model: 0.03 seconds
=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances	705	70.5	%
Incorrectly Classified Instances	295	29.5	%
Kappa statistic	0.2467		
Mean absolute error	0.3467		
Root mean squared error	0.4796		
Relative absolute error	82.5233 %		
Root relative squared error	104.6565 %		
Total Number of Instances	1000		

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area	Class
	0.84	0.61	0.763	0.84	0.799	0.639	good
	0.39	0.16	0.511	0.39	0.442	0.639	bad
Weighted Avg.	0.705	0.475	0.687	0.705	0.692	0.639	

=== Confusion Matrix ===

```
  a   b   <-- classified as
588 112 |   a = good
183 117 |   b = bad
```

LASY.IB1
=== Run information ===
Scheme:weka.classifiers.lazy.IB1
Relation: german_credit
Instances: 1000
Attributes: 21
            checking_status
            duration
            credit_history
            purpose
            credit_amount
            savings_status
            employment
            installment_commitment
            personal_status
            other_parties
            residence_since
            property_magnitude
            age
            other_payment_plans
            housing
            existing_credits
            job
            num_dependents
            own_telephone
            foreign_worker
            class
Test mode:10-fold cross-validation
=== Classifier model (full training set) ===
IB1 classifier
Time taken to build model: 0 seconds
=== Stratified cross-validation ===
=== Summary ===
Correctly Classified Instances   720   72   %
Incorrectly Classified Instances   280   28   %
Kappa statistic   0.3243
Mean absolute error   0.28
```

Root mean squared error            0.5292
Relative absolute error        66.6385 %
Root relative squared error       115.47   %
Total Number of Instances       1000
=== Detailed Accuracy By Class ===
|  | TP Rate | FP Rate | Precision | Recall | F-Measure | ROC Area | Class |
|---|---|---|---|---|---|---|---|
|  | 0.81 | 0.49 | 0.794 | 0.81 | 0.802 | 0.66 | good |
|  | 0.51 | 0.19 | 0.535 | 0.51 | 0.522 | 0.66 | bad |
| Weighted Avg. | 0.72 | 0.4 | 0.716 | 0.72 | 0.718 | 0.66 |  |

=== Confusion Matrix ===

```
  a   b   <-- classified as
 567 133 |   a = good
 147 153 |   b = bad
```

SMO ALGORITHM
=== Run information ===
Scheme:weka.classifiers.functions.SMO -C 1.0 -L 0.001 -P 1.0E-12 -N 0 -V -1 -W 1 -K
"weka.classifiers.functions.supportVector.PolyKernel -C 250007 -E 1.0"
Relation: german_credit
Instances: 1000
Attributes: 21
        checking_status
        duration
        credit_history
        purpose
        credit_amount
        savings_status
        employment
        installment_commitment
        personal_status
        other_parties
        residence_since
        property_magnitude
        age
        other_payment_plans
        housing
        existing_credits
        job
        num_dependents
        own_telephone
        foreign_worker
        class
Test mode:10-fold cross-validation

=== ClasSifier model (full training set) ===
SMO
Kernel used:
  Linear Kernel: K(x,y) = <x,y>
Classifier for classes: good, bad
BinarySMO
Machine linear: showing attribute weights, not support vectors.

```
         0.6805 * (normalized) checking_status=<0
  +      0.3347 * (normalized) checking_status=0<=X<200
  +     -0.4616 * (normalized) checking_status=>=200
  +     -0.5537 * (normalized) checking_status=no checking
  +      1.6987 * (normalized) duration
  +      0.5398 * (normalized) credit_history=no credits/all paid
  +      0.6015 * (normalized) credit_history=all paid
  +     -0.109  * (normalized) credit_history=existing paid
  +     -0.3182 * (normalized) credit_history=delayed previously
  +     -0.7141 * (normalized) credit_history=critical/other existing credit
  +      0.5673 * (normalized) purpose=new car
  +     -0.5615 * (normalized) purpose=used car
  +     -0.1464 * (normalized) purpose=furniture/equipment
  +     -0.0798 * (normalized) purpose=radio/tv
  +      0.5456 * (normalized) purpose=domestic appliance
  +      0     * (normalized) purpose=repairs
  +      0.4441 * (normalized) purpose=education
  +     -0.3951 * (normalized) purpose=retraining
  +     -0.0823 * (normalized) purpose=business
  +     -0.2919 * (normalized) purpose=other
  +      1.1473 * (normalized) credit_amount
  +      0.4056 * (normalized) savings_status=<100
  +      0.115  * (normalized) savings_status=100<=X<500
  +      0.1378 * (normalized) savings_status=500<=X<1000
  +     -0.3775 * (normalized) savings_status=>=1000
  +     -0.2809 * (normalized) savings_status=no known savings
  +      0.2887 * (normalized) employment=unemployed
  +      0.1663 * (normalized) employment=<1
  +      0.0021 * (normalized) employment=1<=X<4
  +     -0.3348 * (normalized) employment=4<=X<7
  +     -0.1222 * (normalized) employment=>=7
  +      0.6503 * (normalized) installment_commitment
  +      0.3335 * (normalized) personal_status=male div/sep
  +      0.1177 * (normalized) personal_status=female div/dep/mar
  +     -0.3697 * (normalized) personal_status=male single
  +     -0.0815 * (normalized) personal_status=male mar/wid
```

```
+      0.0514 * (normalized) other_parties=none
+      0.5697 * (normalized) other_parties=co applicant
+     -0.6211 * (normalized) other_parties=guarantor
+     -0.0001 * (normalized) residence_since
+     -0.2247 * (normalized) property_magnitude=real estate
+     -0.0544 * (normalized) property_magnitude=life insurance
+     -0.0795 * (normalized) property_magnitude=car
+      0.3586 * (normalized) property_magnitude=no known property
+     -0.4191 * (normalized) age
+      0.0697 * (normalized) other_payment_plans=bank
+      0.159  * (normalized) other_payment_plans=stores
+     -0.2287 * (normalized) other_payment_plans=none
+      0.3271 * (normalized) housing=rent
+     -0.0702 * (normalized) housing=own
+     -0.257  * (normalized) housing=for free
+      0.4503 * (normalized) existing_credits
+     -0.2026 * (normalized) job=unemp/unskilled non res
+      0.1501 * (normalized) job=unskilled resident
+      0.1027 * (normalized) job=skilled
+     -0.0502 * (normalized) job=high qualif/self emp/mgmt
+      0.0198 * (normalized) num_dependents
+     -0.1394 * (normalized) own_telephone
+     -0.9888 * (normalized) foreign_worker
-      1.5398
```

Number of kernel evaluations: 436644 (90.558% cached)
Time taken to build model: 0.2 seconds
=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances	751	75.1	%
Incorrectly Classified Instances	249	24.9	%
Kappa statistic	0.3654		
Mean absolute error	0.249		
Root mean squared error	0.499		
Relative absolute error	59.2607 %		
Root relative squared error	108.8905 %		
Total Number of Instances	1000		

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area	Class
	0.871	0.53	0.793	0.871	0.83	0.671	good
	0.47	0.129	0.61	0.47	0.531	0.671	bad
Weighted Avg.	0.751	0.41	0.738	0.751	0.741	0.671	

=== Confusion Matrix ===
  a   b   <-- classified as

```
610  90 |   a = good
159 141 |   b = bad
```

COMPARISION

GRAPHS

Correctly Classified Instances

Incorrectly Classified Instances

Kappa statistic

Mean absolute error

Root mean squared error

Relative absolute error

Root relative squared error

Total Number of Instances