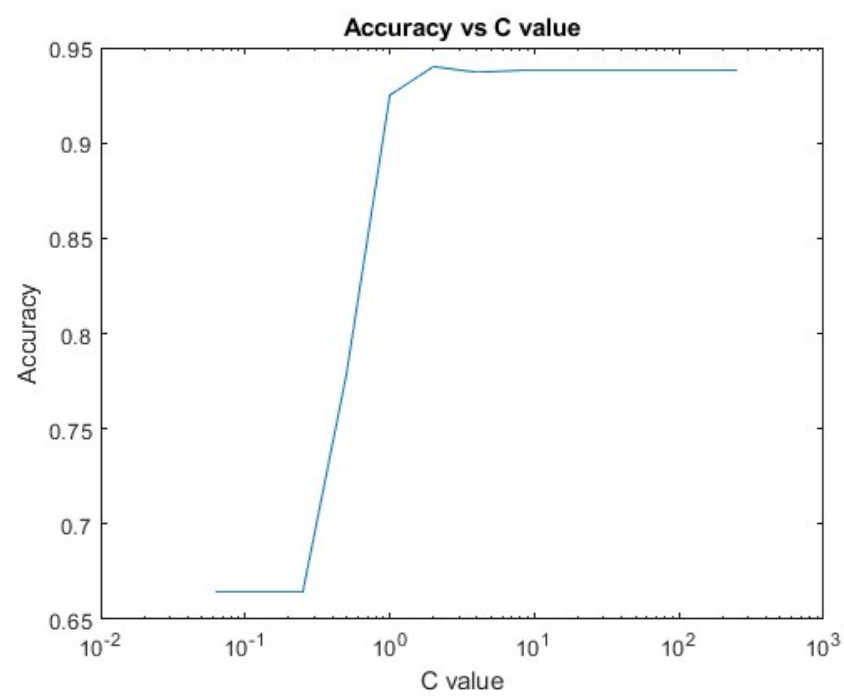


For this project, LIBSVM, a popular open-source SVM toolbox was used to perform classification on an input space with 8-dimensional features. The MATLAB implementation of the library was used to complete the project. For the first part, classification was performed using linear SVMs. The parameter  $C$  was varied and linear SVMs were trained using the training data set. The values for  $C$  were taken from the set  $\{2^{-4}, 2^{-3}, \dots, 2^7, 2^8\}$ . Each trained SVM was used to classify the test data set. Once the classification was done, a plot of the classification accuracy vs the  $C$  value was generated using MATLAB's `semilogx` function. The plot has been included in the root folder of the project directory. In the plot we notice that as the  $C$  value is increased, the classification accuracy quickly rises, peaks out and then falls a little before hitting a plateau. This suggests that there is an optimal value of  $C$  below or beyond which classification is not as efficient.

For the second part of the project, 5-fold cross validation was used to choose the best  $C$  and  $\alpha$  values before classifying the test set. To do this, 50% of the training set (1000 elements) was randomly chosen as the cross validation set. This set was then further divided into 5 subsets, each containing 200 inputs. After this, values for  $C$  and  $\alpha$  were again chosen from the set mentioned earlier and every possible combination was tested over the subsets while training them using an RBF kernel. After obtaining a trained SVM, it was tested against the 4 other validation subsets. The average accuracy was obtained by going through every trained SVM and classifying the other subsets. Thus, a total of 169 loops had to be completed to find out the optimal values for  $C$  and  $\alpha$  that generated the highest classification accuracy. A matrix was generated containing the accuracies, where the entry  $(i, j)$  was the classification accuracy with the  $i$ th value of  $C$  and the  $j$ th value of  $\alpha$ . These values were then used along with the entire training set to train an SVM and then the test set was classified, and the classification accuracy was obtained.

The project can be launched by right clicking the `Project3.m` file in the root folder and selecting 'Run'. In case this method does not work, additional instructions to build the libraries from scratch have been included below:

Building the project requires MATLAB as well as the MinGW64 Compiler(C)/(C++) or any other suitable alternative. In addition, on 64-bit windows systems, run the 'make' command in MATLAB without the quotes while in the `libsvm-3.22\matlab` folder. If this does not work, then open the 'make.m' file and replace all instances of the word 'CFLAGS' with 'COMPFLAGS' and try again. Once this is done, the `Project3.m` script located in the `matlab` folder can be run and the plot and appropriate results will automatically be generated without issue. In addition, an image of the plot has been included in the root folder.



## Test Results

Total nSV = 144

\*

optimization finished, #iter = 182

nu = 0.560000

obj = -222.455961, rho = 1.084860

nSV = 117, nBSV = 107

Total nSV = 117

\*.

WARNING: using -h 0 may be faster

\*

optimization finished, #iter = 222

nu = 0.690000

obj = -272.933521, rho = 0.903123

nSV = 143, nBSV = 135

Total nSV = 143

Accuracy = 71% (142/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 65.5% (131/200) (classification)

\*

optimization finished, #iter = 162

nu = 0.580000

obj = -228.677742, rho = 0.562520

nSV = 120, nBSV = 110

Total nSV = 120

\*

optimization finished, #iter = 174

nu = 0.600000  
obj = -236.457495, rho = 0.852238  
nSV = 127, nBSV = 113  
Total nSV = 127  
\*  
optimization finished, #iter = 145  
nu = 0.700000  
obj = -269.862301, rho = 0.022376  
nSV = 144, nBSV = 135  
Total nSV = 144  
\*,\*  
optimization finished, #iter = 224  
nu = 0.560000  
obj = -220.927040, rho = 1.091504  
nSV = 119, nBSV = 107  
Total nSV = 119  
\*  
optimization finished, #iter = 181  
nu = 0.690000  
obj = -269.956489, rho = 0.831387  
nSV = 144, nBSV = 134  
Total nSV = 144  
Accuracy = 71% (142/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
\*  
optimization finished, #iter = 151

nu = 0.580000  
obj = -225.560696, rho = 0.436636  
nSV = 120, nBSV = 112  
Total nSV = 120  
\*  
optimization finished, #iter = 161  
nu = 0.600000  
obj = -233.090138, rho = 0.757307  
nSV = 125, nBSV = 116  
Total nSV = 125  
\*  
optimization finished, #iter = 184  
nu = 0.700000  
obj = -259.701922, rho = -0.517252  
nSV = 146, nBSV = 136  
Total nSV = 146  
\*.\*  
optimization finished, #iter = 212  
nu = 0.560000  
obj = -217.997954, rho = 1.068244  
nSV = 118, nBSV = 106  
Total nSV = 118  
\*  
optimization finished, #iter = 173  
nu = 0.690000  
obj = -264.320482, rho = 0.753122  
nSV = 144, nBSV = 131  
Total nSV = 144  
Accuracy = 71% (142/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 72% (144/200) (classification)

Accuracy = 65.5% (131/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 65.5% (131/200) (classification)

\*

optimization finished, #iter = 135  
nu = 0.580000  
obj = -219.926243, rho = 0.260719  
nSV = 122, nBSV = 112  
Total nSV = 122

\*, \*

optimization finished, #iter = 342  
nu = 0.600000  
obj = -226.875450, rho = 0.652418  
nSV = 126, nBSV = 107  
Total nSV = 126

\*

optimization finished, #iter = 143  
nu = 0.685940  
obj = -244.883632, rho = -0.191422  
nSV = 142, nBSV = 131  
Total nSV = 142

\*, \*

optimization finished, #iter = 213  
nu = 0.560000  
obj = -212.622176, rho = 0.974546  
nSV = 119, nBSV = 104  
Total nSV = 119

\*

optimization finished, #iter = 161  
nu = 0.690000  
obj = -254.332892, rho = 0.656141  
nSV = 143, nBSV = 130  
Total nSV = 143

Accuracy = 71% (142/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)

Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 66.5% (133/200) (classification)  
Accuracy = 65.5% (131/200) (classification)

\*

optimization finished, #iter = 142  
nu = 0.580000  
obj = -210.205400, rho = 0.084129  
nSV = 123, nBSV = 109  
Total nSV = 123

\*, \*

optimization finished, #iter = 259  
nu = 0.600000  
obj = -215.994540, rho = 0.569841  
nSV = 128, nBSV = 113  
Total nSV = 128

\*, \*

optimization finished, #iter = 219  
nu = 0.675614  
obj = -225.769461, rho = -0.051083  
nSV = 142, nBSV = 126  
Total nSV = 142

\*, \*

optimization finished, #iter = 319  
nu = 0.560000  
obj = -203.724959, rho = 0.938104  
nSV = 124, nBSV = 104  
Total nSV = 124

\*

optimization finished, #iter = 198  
nu = 0.690000  
obj = -238.364288, rho = 0.650327  
nSV = 147, nBSV = 131  
Total nSV = 147

Accuracy = 71.5% (143/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 73% (146/200) (classification)

Accuracy = 70% (140/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 68.5% (137/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 74.5% (149/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65.5% (131/200) (classification)

\*.\*

optimization finished, #iter = 235  
nu = 0.580000  
obj = -194.415217, rho = 0.056044  
nSV = 126, nBSV = 103  
Total nSV = 126

\*.\*

optimization finished, #iter = 224  
nu = 0.592108  
obj = -198.312908, rho = 0.565444  
nSV = 132, nBSV = 107  
Total nSV = 132

\*.\*

optimization finished, #iter = 203  
nu = 0.645679  
obj = -204.101919, rho = 0.055154  
nSV = 140, nBSV = 117  
Total nSV = 140

\*.\*

optimization finished, #iter = 246  
nu = 0.560000  
obj = -191.250115, rho = 0.834327  
nSV = 124, nBSV = 100  
Total nSV = 124

\*.\*

optimization finished, #iter = 214  
nu = 0.688313  
obj = -215.581946, rho = 0.540819



nSV = 148, nBSV = 128

Total nSV = 148

Accuracy = 74% (148/200) (classification)

Accuracy = 81.5% (163/200) (classification)

Accuracy = 73.5% (147/200) (classification)

Accuracy = 86.5% (173/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 80.5% (161/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 66.5% (133/200) (classification)

Accuracy = 67% (134/200) (classification)

Accuracy = 85.5% (171/200) (classification)

Accuracy = 74.5% (149/200) (classification)

Accuracy = 76.5% (153/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 86% (172/200) (classification)

Accuracy = 68.5% (137/200) (classification)

Accuracy = 69% (138/200) (classification)

Accuracy = 77.5% (155/200) (classification)

Accuracy = 67.5% (135/200) (classification)

\*.\*

optimization finished, #iter = 234

nu = 0.562659

obj = -173.899067, rho = 0.121914

nSV = 126, nBSV = 97

Total nSV = 126

\*.\*

optimization finished, #iter = 200

nu = 0.573383

obj = -176.724140, rho = 0.625954

nSV = 133, nBSV = 101

Total nSV = 133

\*.\*

optimization finished, #iter = 220

nu = 0.616295

obj = -181.907008, rho = 0.127257

nSV = 141, nBSV = 108

Total nSV = 141

\*.\*

optimization finished, #iter = 219

nu = 0.560000

obj = -174.817765, rho = 0.734987

nSV = 130, nBSV = 101

Total nSV = 130

.\*

optimization finished, #iter = 255

nu = 0.636813

obj = -187.887079, rho = 0.448234

nSV = 141, nBSV = 115

Total nSV = 141

Accuracy = 80% (160/200) (classification)

Accuracy = 82.5% (165/200) (classification)

Accuracy = 82.5% (165/200) (classification)

Accuracy = 84.5% (169/200) (classification)

Accuracy = 76% (152/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 86.5% (173/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 78% (156/200) (classification)

Accuracy = 76% (152/200) (classification)

Accuracy = 82% (164/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 82% (164/200) (classification)

Accuracy = 82.5% (165/200) (classification)

Accuracy = 87% (174/200) (classification)

Accuracy = 74.5% (149/200) (classification)

Accuracy = 76.5% (153/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 80% (160/200) (classification)

.\*

optimization finished, #iter = 263

nu = 0.528584

obj = -148.861576, rho = 0.191893

nSV = 130, nBSV = 78

Total nSV = 130

.\*

optimization finished, #iter = 332

nu = 0.532184

obj = -151.857346, rho = 0.534713

nSV = 137, nBSV = 80

Total nSV = 137

.\*

optimization finished, #iter = 282

nu = 0.564492

obj = -156.379511, rho = 0.126160

nSV = 138, nBSV = 89

Total nSV = 138

\*.\*

optimization finished, #iter = 240

nu = 0.530558

obj = -150.348611, rho = 0.644212

nSV = 135, nBSV = 88

Total nSV = 135

\*.\*

optimization finished, #iter = 238

nu = 0.586490

obj = -156.777574, rho = 0.371595

nSV = 141, nBSV = 93

Total nSV = 141

Accuracy = 81.5% (163/200) (classification)

Accuracy = 83% (166/200) (classification)

Accuracy = 86.5% (173/200) (classification)

Accuracy = 85% (170/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 86% (172/200) (classification)

Accuracy = 80.5% (161/200) (classification)

Accuracy = 84.5% (169/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 82% (164/200) (classification)

Accuracy = 82.5% (165/200) (classification)

Accuracy = 83% (166/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 88.5% (177/200) (classification)

Accuracy = 77% (154/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 80.5% (161/200) (classification)

\*.\*

optimization finished, #iter = 356

nu = 0.480122

obj = -122.082787, rho = 0.269826

nSV = 140, nBSV = 58

Total nSV = 140

\*.\*

optimization finished, #iter = 345

nu = 0.491062

obj = -129.499232, rho = 0.428166

nSV = 142, nBSV = 63

Total nSV = 142

. \*

optimization finished, #iter = 339

nu = 0.505724

obj = -133.083579, rho = 0.169841

nSV = 144, nBSV = 64

Total nSV = 144

. \*

optimization finished, #iter = 359

nu = 0.479158

obj = -121.739984, rho = 0.519758

nSV = 139, nBSV = 64

Total nSV = 139

. \*

optimization finished, #iter = 361

nu = 0.510420

obj = -125.903582, rho = 0.326292

nSV = 146, nBSV = 56

Total nSV = 146

Accuracy = 81% (162/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 85.5% (171/200) (classification)

Accuracy = 82% (164/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 82.5% (165/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 80.5% (161/200) (classification)

Accuracy = 77.5% (155/200) (classification)

Accuracy = 81.5% (163/200) (classification)

Accuracy = 82% (164/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 83.5% (167/200) (classification)

Accuracy = 77.5% (155/200) (classification)

Accuracy = 78% (156/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 79.5% (159/200) (classification)

. \*. \*

optimization finished, #iter = 415

nu = 0.434149

obj = -97.314846, rho = 0.336319

nSV = 157, nBSV = 31

Total nSV = 157

.\*

optimization finished, #iter = 362

nu = 0.454570

obj = -107.143726, rho = 0.366182

nSV = 160, nBSV = 40

Total nSV = 160

.\*

optimization finished, #iter = 356

nu = 0.474813

obj = -113.525466, rho = 0.247153

nSV = 159, nBSV = 45

Total nSV = 159

.\*

optimization finished, #iter = 377

nu = 0.424860

obj = -97.276088, rho = 0.469566

nSV = 156, nBSV = 30

Total nSV = 156

.\*.\*

optimization finished, #iter = 421

nu = 0.445235

obj = -100.534998, rho = 0.311362

nSV = 160, nBSV = 30

Total nSV = 160

Accuracy = 80% (160/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 83% (166/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 74.5% (149/200) (classification)

Accuracy = 75.5% (151/200) (classification)

Accuracy = 74.5% (149/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 78% (156/200) (classification)

Accuracy = 83.5% (167/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 76% (152/200) (classification)

Accuracy = 75.5% (151/200) (classification)

Accuracy = 80% (160/200) (classification)  
 Accuracy = 78% (156/200) (classification)  
 . \* .  
 optimization finished, #iter = 407  
 nu = 0.396689  
 obj = -81.445287, rho = 0.372180  
 nSV = 175, nBSV = 6  
 Total nSV = 175  
 . \*  
 optimization finished, #iter = 389  
 nu = 0.422106  
 obj = -91.061823, rho = 0.367868  
 nSV = 178, nBSV = 16  
 Total nSV = 178  
 . \*  
 optimization finished, #iter = 387  
 nu = 0.445371  
 obj = -96.263347, rho = 0.280802  
 nSV = 175, nBSV = 23  
 Total nSV = 175  
 . \*  
 optimization finished, #iter = 378  
 nu = 0.392817  
 obj = -83.208381, rho = 0.440088  
 nSV = 174, nBSV = 13  
 Total nSV = 174  
 . \* .  
 optimization finished, #iter = 425  
 nu = 0.403925  
 obj = -84.617879, rho = 0.335440  
 nSV = 178, nBSV = 9  
 Total nSV = 178  
 Accuracy = 77.5% (155/200) (classification)  
 Accuracy = 78.5% (157/200) (classification)  
 Accuracy = 80% (160/200) (classification)  
 Accuracy = 77% (154/200) (classification)  
 Accuracy = 75.5% (151/200) (classification)  
 Accuracy = 78% (156/200) (classification)  
 Accuracy = 79.5% (159/200) (classification)  
 Accuracy = 69.5% (139/200) (classification)  
 Accuracy = 74% (148/200) (classification)  
 Accuracy = 72% (144/200) (classification)  
 Accuracy = 71% (142/200) (classification)  
 Accuracy = 74% (148/200) (classification)

Accuracy = 78.5% (157/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 75.5% (151/200) (classification)

. \*. \*

optimization finished, #iter = 405  
nu = 0.380194  
obj = -76.264316, rho = 0.372206  
nSV = 193, nBSV = 1  
Total nSV = 193

. \*

optimization finished, #iter = 393  
nu = 0.404787  
obj = -83.669002, rho = 0.372886  
nSV = 193, nBSV = 7  
Total nSV = 193

. \*. \*

optimization finished, #iter = 417  
nu = 0.434942  
obj = -88.526203, rho = 0.290908  
nSV = 189, nBSV = 6  
Total nSV = 189

. \*

optimization finished, #iter = 393  
nu = 0.384875  
obj = -77.876771, rho = 0.424357  
nSV = 191, nBSV = 3  
Total nSV = 191

. \*. \*

optimization finished, #iter = 433  
nu = 0.400750  
obj = -80.718498, rho = 0.337211  
nSV = 192, nBSV = 2  
Total nSV = 192

Accuracy = 74% (148/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 74.5% (149/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 76.5% (153/200) (classification)

Accuracy = 76% (152/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 69% (138/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 68% (136/200) (classification)  
Accuracy = 69.5% (139/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 70% (140/200) (classification)

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optimization finished, #iter = 396  
nu = 0.389296  
obj = -77.859532, rho = 0.383729  
nSV = 199, nBSV = 0  
Total nSV = 199

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optimization finished, #iter = 386  
nu = 0.409064  
obj = -82.316158, rho = 0.379448  
nSV = 200, nBSV = 2  
Total nSV = 200

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optimization finished, #iter = 414  
nu = 0.441959  
obj = -88.391509, rho = 0.290275  
nSV = 199, nBSV = 0  
Total nSV = 199

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optimization finished, #iter = 463  
nu = 0.389336  
obj = -77.868605, rho = 0.423678  
nSV = 198, nBSV = 0  
Total nSV = 198

. \* . \*

optimization finished, #iter = 441  
nu = 0.419062  
obj = -83.812354, rho = 0.315646  
nSV = 200, nBSV = 0  
Total nSV = 200



Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 69.5% (139/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 68.5% (137/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 74.5% (149/200) (classification)  
Accuracy = 73.5% (147/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 69.5% (139/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 67% (134/200) (classification)

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optimization finished, #iter = 163  
nu = 0.580000  
obj = -457.343454, rho = 0.338485  
nSV = 121, nBSV = 111  
Total nSV = 121

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optimization finished, #iter = 184  
nu = 0.600000  
obj = -472.868985, rho = 0.869652  
nSV = 124, nBSV = 115  
Total nSV = 124

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optimization finished, #iter = 118  
nu = 0.700000  
obj = -540.104859, rho = -0.098697  
nSV = 143, nBSV = 137  
Total nSV = 143

\*.\*

optimization finished, #iter = 218  
nu = 0.560000  
obj = -441.824102, rho = 1.166773  
nSV = 117, nBSV = 107  
Total nSV = 117

\*.\*

optimization finished, #iter = 235

nu = 0.690000

obj = -539.735418, rho = 0.817743

nSV = 144, nBSV = 136

Total nSV = 144

Accuracy = 71% (142/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 65.5% (131/200) (classification)

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optimization finished, #iter = 185

nu = 0.580000

obj = -450.712052, rho = 0.125182

nSV = 120, nBSV = 111

Total nSV = 120

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optimization finished, #iter = 203

nu = 0.600000

obj = -465.830644, rho = 0.717294

nSV = 125, nBSV = 114

Total nSV = 125

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optimization finished, #iter = 165

nu = 0.700000

obj = -519.449345, rho = -0.954621

nSV = 144, nBSV = 136

Total nSV = 144

\*.\*

optimization finished, #iter = 249  
nu = 0.560000  
obj = -435.709143, rho = 1.180454  
nSV = 118, nBSV = 107  
Total nSV = 118

\*.\*

optimization finished, #iter = 222  
nu = 0.690000  
obj = -527.826400, rho = 0.674954  
nSV = 144, nBSV = 134  
Total nSV = 144  
Accuracy = 71% (142/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 65.5% (131/200) (classification)

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optimization finished, #iter = 163  
nu = 0.580000  
obj = -438.242932, rho = -0.124384  
nSV = 120, nBSV = 112  
Total nSV = 120

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optimization finished, #iter = 194  
nu = 0.600000  
obj = -452.360724, rho = 0.520056  
nSV = 125, nBSV = 115  
Total nSV = 125

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optimization finished, #iter = 151  
nu = 0.685454  
obj = -485.260449, rho = -0.749387  
nSV = 142, nBSV = 134  
Total nSV = 142

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optimization finished, #iter = 218  
nu = 0.560000  
obj = -423.992002, rho = 1.143748  
nSV = 117, nBSV = 106  
Total nSV = 117

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optimization finished, #iter = 215  
nu = 0.690000  
obj = -505.282029, rho = 0.509625  
nSV = 144, nBSV = 131  
Total nSV = 144

Accuracy = 71% (142/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 68% (136/200) (classification)  
Accuracy = 65.5% (131/200) (classification)

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optimization finished, #iter = 154  
nu = 0.580000  
obj = -415.704986, rho = -0.476446  
nSV = 122, nBSV = 112  
Total nSV = 122

\*.\*

optimization finished, #iter = 335  
nu = 0.600000  
obj = -427.502323, rho = 0.302241  
nSV = 126, nBSV = 108  
Total nSV = 126

\*.\*

optimization finished, #iter = 222  
nu = 0.665189  
obj = -436.781837, rho = -0.385161  
nSV = 141, nBSV = 126  
Total nSV = 141

\*.\*

optimization finished, #iter = 308  
nu = 0.560000  
obj = -402.488405, rho = 0.951461  
nSV = 119, nBSV = 103  
Total nSV = 119

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optimization finished, #iter = 162  
nu = 0.690000  
obj = -465.331705, rho = 0.314758  
nSV = 143, nBSV = 130  
Total nSV = 143

Accuracy = 71.5% (143/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 74.5% (149/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 65.5% (131/200) (classification)

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optimization finished, #iter = 190  
nu = 0.577817  
obj = -376.854496, rho = -0.805715  
nSV = 122, nBSV = 109  
Total nSV = 122

\*.\*

optimization finished, #iter = 240  
nu = 0.589162  
obj = -384.970809, rho = 0.325834  
nSV = 125, nBSV = 108  
Total nSV = 125

\*.\*

optimization finished, #iter = 256  
nu = 0.617125  
obj = -380.534949, rho = -0.226794  
nSV = 131, nBSV = 115  
Total nSV = 131

\*.\*

optimization finished, #iter = 318  
nu = 0.560000  
obj = -366.900059, rho = 0.875793  
nSV = 123, nBSV = 104  
Total nSV = 123

\*.\*

optimization finished, #iter = 238  
nu = 0.668174  
obj = -403.480358, rho = 0.444512  
nSV = 142, nBSV = 125  
Total nSV = 142

Accuracy = 80.5% (161/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 74.5% (149/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 81.5% (163/200) (classification)

Accuracy = 84% (168/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 82.5% (165/200) (classification)  
Accuracy = 77% (154/200) (classification)  
.\*  
optimization finished, #iter = 280  
nu = 0.547541  
obj = -321.701726, rho = -0.427132  
nSV = 124, nBSV = 98  
Total nSV = 124  
\*.\*  
optimization finished, #iter = 267  
nu = 0.553305  
obj = -329.959859, rho = 0.581679  
nSV = 127, nBSV = 97  
Total nSV = 127  
\*.\*  
optimization finished, #iter = 326  
nu = 0.560580  
obj = -326.314494, rho = 0.070777  
nSV = 128, nBSV = 101  
Total nSV = 128  
\*.\*  
optimization finished, #iter = 246  
nu = 0.549082  
obj = -317.375053, rho = 0.652964  
nSV = 124, nBSV = 97  
Total nSV = 124  
\*.\*  
optimization finished, #iter = 307  
nu = 0.589850  
obj = -338.422800, rho = 0.190000  
nSV = 132, nBSV = 107  
Total nSV = 132  
Accuracy = 87% (174/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 93.5% (187/200) (classification)

Accuracy = 86.5% (173/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 89% (178/200) (classification)

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optimization finished, #iter = 375  
nu = 0.485885  
obj = -266.686929, rho = -0.134591  
nSV = 118, nBSV = 75  
Total nSV = 118

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optimization finished, #iter = 399  
nu = 0.482405  
obj = -274.063944, rho = 0.565799  
nSV = 120, nBSV = 76  
Total nSV = 120

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optimization finished, #iter = 341  
nu = 0.498765  
obj = -274.616130, rho = 0.068044  
nSV = 121, nBSV = 82  
Total nSV = 121

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optimization finished, #iter = 301  
nu = 0.487045  
obj = -269.589470, rho = 0.540702  
nSV = 120, nBSV = 83  
Total nSV = 120

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optimization finished, #iter = 461  
nu = 0.518352  
obj = -276.248038, rho = 0.202922  
nSV = 123, nBSV = 80  
Total nSV = 123

Accuracy = 88.5% (177/200) (classification)  
Accuracy = 87.5% (175/200) (classification)



Accuracy = 89.5% (179/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 83.5% (167/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 81% (162/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 87.5% (175/200) (classification)

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optimization finished, #iter = 378

nu = 0.409043

obj = -211.090949, rho = 0.078363

nSV = 122, nBSV = 54

Total nSV = 122

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optimization finished, #iter = 451

nu = 0.413097

obj = -223.054412, rho = 0.500338

nSV = 124, nBSV = 54

Total nSV = 124

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optimization finished, #iter = 444

nu = 0.422165

obj = -223.284337, rho = 0.115375

nSV = 120, nBSV = 55

Total nSV = 120

. \* . \*

optimization finished, #iter = 475

nu = 0.421399

obj = -212.308180, rho = 0.495858

nSV = 122, nBSV = 57

Total nSV = 122

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optimization finished, #iter = 446

nu = 0.424165  
obj = -213.981604, rho = 0.255816  
nSV = 123, nBSV = 53  
Total nSV = 123  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 83.5% (167/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 84% (168/200) (classification)

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optimization finished, #iter = 451  
nu = 0.340528  
obj = -155.164375, rho = 0.240287  
nSV = 128, nBSV = 32  
Total nSV = 128

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optimization finished, #iter = 444  
nu = 0.352722  
obj = -173.173630, rho = 0.399531  
nSV = 131, nBSV = 35  
Total nSV = 131

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optimization finished, #iter = 339  
nu = 0.363827  
obj = -180.712369, rho = 0.144816  
nSV = 123, nBSV = 42  
Total nSV = 123

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optimization finished, #iter = 524

nu = 0.333019  
obj = -153.067197, rho = 0.456555  
nSV = 126, nBSV = 26  
Total nSV = 126  
.\*.\*  
optimization finished, #iter = 472  
nu = 0.338947  
obj = -157.935080, rho = 0.264775  
nSV = 134, nBSV = 27  
Total nSV = 134  
Accuracy = 82% (164/200) (classification)  
Accuracy = 83.5% (167/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 81% (162/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 83.5% (167/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 83.5% (167/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 82.5% (165/200) (classification)  
Accuracy = 81% (162/200) (classification)  
.\*.\*  
optimization finished, #iter = 500  
nu = 0.257262  
obj = -106.716209, rho = 0.324321  
nSV = 151, nBSV = 6  
Total nSV = 151  
.\*.\*  
optimization finished, #iter = 520  
nu = 0.285561  
obj = -127.178043, rho = 0.349506  
nSV = 150, nBSV = 12  
Total nSV = 150  
.\*.\*  
optimization finished, #iter = 434

nu = 0.308286  
obj = -135.508423, rho = 0.227321  
nSV = 147, nBSV = 20  
Total nSV = 147  
.\*.\*  
optimization finished, #iter = 447  
nu = 0.257794  
obj = -111.241497, rho = 0.441828  
nSV = 151, nBSV = 12  
Total nSV = 151  
.\*.\*  
optimization finished, #iter = 516  
nu = 0.263113  
obj = -113.533094, rho = 0.305688  
nSV = 154, nBSV = 9  
Total nSV = 154  
Accuracy = 79% (158/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 74.5% (149/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 73.5% (147/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
.\*.\*  
optimization finished, #iter = 445  
nu = 0.207020  
obj = -82.891026, rho = 0.373553  
nSV = 175, nBSV = 1  
Total nSV = 175  
.\*.\*  
optimization finished, #iter = 402

nu = 0.234242  
obj = -98.998904, rho = 0.365571  
nSV = 174, nBSV = 3  
Total nSV = 174  
.\*.\*  
optimization finished, #iter = 436  
nu = 0.251717  
obj = -102.022723, rho = 0.272874  
nSV = 174, nBSV = 3  
Total nSV = 174  
.\*  
optimization finished, #iter = 399  
nu = 0.214120  
obj = -87.573236, rho = 0.431827  
nSV = 170, nBSV = 3  
Total nSV = 170  
.\*.\*  
optimization finished, #iter = 431  
nu = 0.217586  
obj = -88.121005, rho = 0.329480  
nSV = 177, nBSV = 2  
Total nSV = 177  
Accuracy = 77% (154/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 76% (152/200) (classification)  
.\*.\*  
optimization finished, #iter = 411

nu = 0.190761  
obj = -76.303949, rho = 0.371490  
nSV = 193, nBSV = 0  
Total nSV = 193  
.\*.\*  
optimization finished, #iter = 411  
nu = 0.214306  
obj = -86.281224, rho = 0.364771  
nSV = 192, nBSV = 2  
Total nSV = 192  
.\*.\*  
optimization finished, #iter = 430  
nu = 0.222620  
obj = -89.044535, rho = 0.288381  
nSV = 188, nBSV = 0  
Total nSV = 188  
.\*.\*  
optimization finished, #iter = 400  
nu = 0.195603  
obj = -78.241750, rho = 0.422762  
nSV = 191, nBSV = 0  
Total nSV = 191  
.\*.\*  
optimization finished, #iter = 429  
nu = 0.202175  
obj = -80.869176, rho = 0.337580  
nSV = 192, nBSV = 0  
Total nSV = 192  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 69% (138/200) (classification)  
Accuracy = 73.5% (147/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76.5% (153/200) (classification)

Accuracy = 68.5% (137/200) (classification)  
Accuracy = 69.5% (139/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 70% (140/200) (classification)

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optimization finished, #iter = 396  
nu = 0.194648  
obj = -77.859532, rho = 0.383729  
nSV = 199, nBSV = 0  
Total nSV = 199

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optimization finished, #iter = 403  
nu = 0.206054  
obj = -82.418921, rho = 0.377600  
nSV = 200, nBSV = 0  
Total nSV = 200

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optimization finished, #iter = 419  
nu = 0.220979  
obj = -88.391509, rho = 0.290267  
nSV = 199, nBSV = 0  
Total nSV = 199

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optimization finished, #iter = 463  
nu = 0.194668  
obj = -77.868605, rho = 0.423678  
nSV = 198, nBSV = 0  
Total nSV = 198

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optimization finished, #iter = 441  
nu = 0.209531  
obj = -83.812354, rho = 0.315646  
nSV = 200, nBSV = 0  
Total nSV = 200

Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 70% (140/200) (classification)

Accuracy = 65.5% (131/200) (classification)  
Accuracy = 68.5% (137/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 74.5% (149/200) (classification)  
Accuracy = 73.5% (147/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 69.5% (139/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 67% (134/200) (classification)

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optimization finished, #iter = 172  
nu = 0.580000  
obj = -901.374060, rho = -0.318685  
nSV = 121, nBSV = 111  
Total nSV = 121

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optimization finished, #iter = 195  
nu = 0.600000  
obj = -931.477576, rho = 0.745554  
nSV = 123, nBSV = 116  
Total nSV = 123

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optimization finished, #iter = 148  
nu = 0.700000  
obj = -1040.419370, rho = -1.200633  
nSV = 143, nBSV = 137  
Total nSV = 143

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optimization finished, #iter = 223  
nu = 0.560000  
obj = -871.296169, rho = 1.341834  
nSV = 117, nBSV = 107  
Total nSV = 117

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optimization finished, #iter = 261  
nu = 0.690000  
obj = -1054.942192, rho = 0.635628  
nSV = 142, nBSV = 135  
Total nSV = 142

Accuracy = 71% (142/200) (classification)  
Accuracy = 71.5% (143/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 71% (142/200) (classification)



Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 65.5% (131/200) (classification)

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optimization finished, #iter = 275  
nu = 0.580000  
obj = -874.853464, rho = -0.747426  
nSV = 119, nBSV = 111  
Total nSV = 119

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optimization finished, #iter = 242  
nu = 0.600000  
obj = -903.323494, rho = 0.447150  
nSV = 125, nBSV = 114  
Total nSV = 125

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optimization finished, #iter = 172  
nu = 0.687084  
obj = -967.439621, rho = -1.240906  
nSV = 141, nBSV = 133  
Total nSV = 141

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optimization finished, #iter = 282  
nu = 0.560000  
obj = -846.837075, rho = 1.366113  
nSV = 118, nBSV = 107  
Total nSV = 118

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optimization finished, #iter = 247  
nu = 0.690000  
obj = -1007.305811, rho = 0.356209

nSV = 144, nBSV = 134

Total nSV = 144

Accuracy = 71% (142/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 66% (132/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 68% (136/200) (classification)

Accuracy = 65.5% (131/200) (classification)

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optimization finished, #iter = 149

nu = 0.580000

obj = -824.971641, rho = -1.249900

nSV = 120, nBSV = 112

Total nSV = 120

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optimization finished, #iter = 228

nu = 0.600000

obj = -849.442973, rho = 0.043531

nSV = 125, nBSV = 115

Total nSV = 125

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optimization finished, #iter = 223

nu = 0.660315

obj = -859.388881, rho = -1.011440

nSV = 137, nBSV = 125

Total nSV = 137

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optimization finished, #iter = 251

nu = 0.560000

obj = -799.968219, rho = 1.288865

nSV = 117, nBSV = 106

Total nSV = 117

\*.\*

optimization finished, #iter = 219

nu = 0.690000

obj = -917.128165, rho = 0.020971

nSV = 144, nBSV = 131

Total nSV = 144

Accuracy = 71.5% (143/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 77% (154/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 66.5% (133/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 76% (152/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 66.5% (133/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 78% (156/200) (classification)

Accuracy = 65.5% (131/200) (classification)

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optimization finished, #iter = 261

nu = 0.574043

obj = -735.173796, rho = -1.824606

nSV = 122, nBSV = 108

Total nSV = 122

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optimization finished, #iter = 337

nu = 0.589837

obj = -751.488731, rho = 0.017900

nSV = 124, nBSV = 106

Total nSV = 124

\*.\*

optimization finished, #iter = 242

nu = 0.594323

obj = -729.117373, rho = -0.861111

nSV = 127, nBSV = 113

Total nSV = 127

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optimization finished, #iter = 395

nu = 0.560000

obj = -713.955408, rho = 0.897576

nSV = 119, nBSV = 103

Total nSV = 119

\*. \*

optimization finished, #iter = 243

nu = 0.650000

obj = -771.904611, rho = -0.052485

nSV = 136, nBSV = 123

Total nSV = 136

Accuracy = 83% (166/200) (classification)

Accuracy = 87% (174/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 80.5% (161/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 81.5% (163/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 77.5% (155/200) (classification)

Accuracy = 80.5% (161/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 92.5% (185/200) (classification)

Accuracy = 77% (154/200) (classification)

Accuracy = 86% (172/200) (classification)

Accuracy = 86.5% (173/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 83% (166/200) (classification)

Accuracy = 85% (170/200) (classification)

Accuracy = 81.5% (163/200) (classification)

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optimization finished, #iter = 259

nu = 0.522577

obj = -608.525801, rho = -1.737670

nSV = 113, nBSV = 96

Total nSV = 113

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optimization finished, #iter = 367

nu = 0.530179

obj = -624.303030, rho = 0.464409

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nSV = 116, nBSV = 96
Total nSV = 116
.*.*
optimization finished, #iter = 434
nu = 0.524010
obj = -598.933691, rho = -0.188350
nSV = 119, nBSV = 92
Total nSV = 119
.*
optimization finished, #iter = 320
nu = 0.510022
obj = -584.809355, rho = 0.576910
nSV = 113, nBSV = 91
Total nSV = 113
.*
optimization finished, #iter = 306
nu = 0.548122
obj = -622.701252, rho = -0.101244
nSV = 120, nBSV = 101
Total nSV = 120
Accuracy = 91.5% (183/200) (classification)
Accuracy = 88% (176/200) (classification)
Accuracy = 90% (180/200) (classification)
Accuracy = 90.5% (181/200) (classification)
Accuracy = 89.5% (179/200) (classification)
Accuracy = 90.5% (181/200) (classification)
Accuracy = 87.5% (175/200) (classification)
Accuracy = 94.5% (189/200) (classification)
Accuracy = 89.5% (179/200) (classification)
Accuracy = 90.5% (181/200) (classification)
Accuracy = 85.5% (171/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 87% (174/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 92.5% (185/200) (classification)
Accuracy = 88.5% (177/200) (classification)
Accuracy = 92% (184/200) (classification)
Accuracy = 90.5% (181/200) (classification)
Accuracy = 89.5% (179/200) (classification)
.*.*
optimization finished, #iter = 547
nu = 0.440745
obj = -481.801592, rho = -0.772726
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nSV = 107, nBSV = 67  
Total nSV = 107  
.\*.\*  
optimization finished, #iter = 497  
nu = 0.445392  
obj = -508.079862, rho = 0.708913  
nSV = 107, nBSV = 70  
Total nSV = 107  
.\*.\*  
optimization finished, #iter = 433  
nu = 0.441020  
obj = -489.795543, rho = 0.058676  
nSV = 105, nBSV = 76  
Total nSV = 105  
.\*.\*  
optimization finished, #iter = 512  
nu = 0.431093  
obj = -473.963240, rho = 0.519219  
nSV = 105, nBSV = 69  
Total nSV = 105  
.\*.\*  
optimization finished, #iter = 542  
nu = 0.459714  
obj = -497.180966, rho = -0.173863  
nSV = 106, nBSV = 75  
Total nSV = 106  
Accuracy = 90% (180/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 93% (186/200) (classification)

Accuracy = 90% (180/200) (classification)  
Accuracy = 91% (182/200) (classification)  
.\*.\*  
optimization finished, #iter = 497  
nu = 0.364991  
obj = -378.850246, rho = -0.260294  
nSV = 102, nBSV = 48  
Total nSV = 102  
..\*.\*  
optimization finished, #iter = 644  
nu = 0.367554  
obj = -408.449564, rho = 0.658967  
nSV = 106, nBSV = 50  
Total nSV = 106  
.\*.\*  
optimization finished, #iter = 480  
nu = 0.367062  
obj = -395.160112, rho = 0.024510  
nSV = 104, nBSV = 53  
Total nSV = 104  
.\*.\*  
optimization finished, #iter = 571  
nu = 0.365933  
obj = -378.073008, rho = 0.432341  
nSV = 101, nBSV = 49  
Total nSV = 101  
..\*.\*  
optimization finished, #iter = 705  
nu = 0.370648  
obj = -385.004523, rho = 0.027742  
nSV = 108, nBSV = 51  
Total nSV = 108  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 87.5% (175/200) (classification)

Accuracy = 90.5% (181/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 88% (176/200) (classification)

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optimization finished, #iter = 574

nu = 0.293636

obj = -272.747585, rho = 0.074632

nSV = 108, nBSV = 31

Total nSV = 108

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optimization finished, #iter = 630

nu = 0.298821

obj = -311.112876, rho = 0.488706

nSV = 117, nBSV = 33

Total nSV = 117

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optimization finished, #iter = 513

nu = 0.304308

obj = -308.061893, rho = 0.090779

nSV = 102, nBSV = 33

Total nSV = 102

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optimization finished, #iter = 579

nu = 0.285761

obj = -273.627057, rho = 0.444637

nSV = 101, nBSV = 30

Total nSV = 101

.. \*. \*

optimization finished, #iter = 653

nu = 0.283729

obj = -282.719211, rho = 0.207973

nSV = 104, nBSV = 30

Total nSV = 104

Accuracy = 86% (172/200) (classification)

Accuracy = 88% (176/200) (classification)

Accuracy = 88.5% (177/200) (classification)

Accuracy = 87% (174/200) (classification)

Accuracy = 81.5% (163/200) (classification)

Accuracy = 85.5% (171/200) (classification)



Accuracy = 89% (178/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 84.5% (169/200) (classification)

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optimization finished, #iter = 707

nu = 0.206228

obj = -174.898580, rho = 0.241176

nSV = 120, nBSV = 8

Total nSV = 120

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optimization finished, #iter = 564

nu = 0.230430

obj = -220.203989, rho = 0.410175

nSV = 126, nBSV = 19

Total nSV = 126

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optimization finished, #iter = 575

nu = 0.248644

obj = -223.875380, rho = 0.129301

nSV = 113, nBSV = 18

Total nSV = 113

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optimization finished, #iter = 604

nu = 0.204597

obj = -177.144111, rho = 0.411194

nSV = 120, nBSV = 8

Total nSV = 120

..\*.\*

optimization finished, #iter = 644

nu = 0.208852

obj = -186.266628, rho = 0.274991

nSV = 126, nBSV = 9

Total nSV = 126

Accuracy = 81.5% (163/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 82.5% (165/200) (classification)  
Accuracy = 82.5% (165/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 83.5% (167/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 81.5% (163/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 82.5% (165/200) (classification)  
Accuracy = 82% (164/200) (classification)

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optimization finished, #iter = 549  
nu = 0.135647  
obj = -110.665459, rho = 0.327738  
nSV = 150, nBSV = 1  
Total nSV = 150

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optimization finished, #iter = 567  
nu = 0.164002  
obj = -143.230673, rho = 0.363743  
nSV = 148, nBSV = 3  
Total nSV = 148

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optimization finished, #iter = 543  
nu = 0.177517  
obj = -145.544117, rho = 0.203639  
nSV = 137, nBSV = 3  
Total nSV = 137

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optimization finished, #iter = 491  
nu = 0.143339  
obj = -120.126912, rho = 0.433194  
nSV = 145, nBSV = 5  
Total nSV = 145

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optimization finished, #iter = 527

nu = 0.147673

obj = -122.670802, rho = 0.289107

nSV = 151, nBSV = 2

Total nSV = 151

Accuracy = 80.5% (161/200) (classification)

Accuracy = 83% (166/200) (classification)

Accuracy = 85% (170/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 75% (150/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 77% (154/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 75% (150/200) (classification)

Accuracy = 80.5% (161/200) (classification)

Accuracy = 76.5% (153/200) (classification)

Accuracy = 86.5% (173/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 77.5% (155/200) (classification)

Accuracy = 74.5% (149/200) (classification)

Accuracy = 80.5% (161/200) (classification)

Accuracy = 77% (154/200) (classification)

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optimization finished, #iter = 444

nu = 0.103618

obj = -82.893372, rho = 0.373676

nSV = 175, nBSV = 0

Total nSV = 175

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optimization finished, #iter = 430

nu = 0.127373

obj = -105.912317, rho = 0.363654

nSV = 172, nBSV = 2

Total nSV = 172

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optimization finished, #iter = 454

nu = 0.128065

obj = -102.450971, rho = 0.274335

nSV = 173, nBSV = 0

Total nSV = 173

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optimization finished, #iter = 447

nu = 0.110922

obj = -88.866615, rho = 0.430642

nSV = 169, nBSV = 1

Total nSV = 169

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optimization finished, #iter = 455

nu = 0.110694

obj = -88.555952, rho = 0.328984

nSV = 177, nBSV = 0

Total nSV = 177

Accuracy = 77% (154/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 77.5% (155/200) (classification)

Accuracy = 76% (152/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 75% (150/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 78% (156/200) (classification)

Accuracy = 77.5% (155/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 76% (152/200) (classification)

.\*. \*

optimization finished, #iter = 411

nu = 0.095381

obj = -76.303949, rho = 0.371490

nSV = 193, nBSV = 0

Total nSV = 193

.\*. \*

optimization finished, #iter = 426

nu = 0.107918

obj = -86.333932, rho = 0.364099

nSV = 192, nBSV = 0

Total nSV = 192

.\*. \*

optimization finished, #iter = 430

nu = 0.111310

obj = -89.044535, rho = 0.288381

nSV = 188, nBSV = 0

Total nSV = 188

.\*. \*

optimization finished, #iter = 400

nu = 0.097801

obj = -78.241750, rho = 0.422762

nSV = 191, nBSV = 0

Total nSV = 191

.\*. \*

optimization finished, #iter = 429

nu = 0.101087

obj = -80.869176, rho = 0.337580

nSV = 192, nBSV = 0

Total nSV = 192

Accuracy = 74% (148/200) (classification)

Accuracy = 75% (150/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 75% (150/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 77% (154/200) (classification)

Accuracy = 76% (152/200) (classification)

Accuracy = 70.5% (141/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 69% (138/200) (classification)

Accuracy = 73.5% (147/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 75.5% (151/200) (classification)

Accuracy = 77.5% (155/200) (classification)

Accuracy = 76.5% (153/200) (classification)

Accuracy = 68.5% (137/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 76.5% (153/200) (classification)

Accuracy = 70% (140/200) (classification)

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optimization finished, #iter = 396

nu = 0.097324

obj = -77.859532, rho = 0.383729

nSV = 199, nBSV = 0

Total nSV = 199

.\*. \*

optimization finished, #iter = 403

nu = 0.103027

obj = -82.418921, rho = 0.377600

nSV = 200, nBSV = 0

Total nSV = 200

.\*. \*

optimization finished, #iter = 419

nu = 0.110490

obj = -88.391509, rho = 0.290267

nSV = 199, nBSV = 0

Total nSV = 199

.\*. \*

optimization finished, #iter = 463

nu = 0.097334

obj = -77.868605, rho = 0.423678

nSV = 198, nBSV = 0

Total nSV = 198

.\*. \*

optimization finished, #iter = 441

nu = 0.104766

obj = -83.812354, rho = 0.315646

nSV = 200, nBSV = 0

Total nSV = 200

Accuracy = 72% (144/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 75.5% (151/200) (classification)

Accuracy = 70.5% (141/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 68.5% (137/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 74.5% (149/200) (classification)

Accuracy = 73.5% (147/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 66% (132/200) (classification)

Accuracy = 69.5% (139/200) (classification)

Accuracy = 70.5% (141/200) (classification)

Accuracy = 67% (134/200) (classification)

\*.\*

optimization finished, #iter = 298  
nu = 0.580000  
obj = -1749.503149, rho = -1.617698  
nSV = 121, nBSV = 112  
Total nSV = 121

\*.\*

optimization finished, #iter = 219  
nu = 0.600000  
obj = -1805.912788, rho = 0.501305  
nSV = 123, nBSV = 116  
Total nSV = 123

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optimization finished, #iter = 199  
nu = 0.688781  
obj = -1933.602713, rho = -1.918724  
nSV = 140, nBSV = 132  
Total nSV = 140

\*.\*

optimization finished, #iter = 241  
nu = 0.560000  
obj = -1693.186980, rho = 1.677958  
nSV = 117, nBSV = 107  
Total nSV = 117

\*.\*

optimization finished, #iter = 293  
nu = 0.690000  
obj = -2011.769407, rho = 0.276831  
nSV = 142, nBSV = 135  
Total nSV = 142

Accuracy = 71% (142/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)

Accuracy = 70.5% (141/200) (classification)  
 Accuracy = 72% (144/200) (classification)  
 Accuracy = 65.5% (131/200) (classification)  
 Accuracy = 65.5% (131/200) (classification)  
 Accuracy = 68% (136/200) (classification)  
 Accuracy = 65.5% (131/200) (classification)  
 \*.  
 optimization finished, #iter = 293  
 nu = 0.580000  
 obj = -1643.415571, rho = -2.501585  
 nSV = 119, nBSV = 110  
 Total nSV = 119  
 \*.  
 optimization finished, #iter = 277  
 nu = 0.600000  
 obj = -1693.294758, rho = -0.097489  
 nSV = 125, nBSV = 114  
 Total nSV = 125  
 \*.  
 optimization finished, #iter = 210  
 nu = 0.658504  
 obj = -1708.153689, rho = -1.852459  
 nSV = 136, nBSV = 127  
 Total nSV = 136  
 \*.  
 optimization finished, #iter = 272  
 nu = 0.560000  
 obj = -1595.348197, rho = 1.726245  
 nSV = 118, nBSV = 107  
 Total nSV = 118  
 \*.  
 optimization finished, #iter = 263  
 nu = 0.690000  
 obj = -1821.224071, rho = -0.271431  
 nSV = 144, nBSV = 134  
 Total nSV = 144  
 Accuracy = 72% (144/200) (classification)  
 Accuracy = 80% (160/200) (classification)  
 Accuracy = 71% (142/200) (classification)  
 Accuracy = 82% (164/200) (classification)  
 Accuracy = 70% (140/200) (classification)  
 Accuracy = 78% (156/200) (classification)  
 Accuracy = 70% (140/200) (classification)  
 Accuracy = 83% (166/200) (classification)



Accuracy = 67% (134/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 81.5% (163/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 81% (162/200) (classification)  
Accuracy = 66.5% (133/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 65.5% (131/200) (classification)

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optimization finished, #iter = 174  
nu = 0.564716  
obj = -1448.199677, rho = -3.289774  
nSV = 117, nBSV = 107  
Total nSV = 117

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optimization finished, #iter = 263  
nu = 0.584283  
obj = -1481.583087, rho = -0.324180  
nSV = 123, nBSV = 112  
Total nSV = 123

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optimization finished, #iter = 392  
nu = 0.583227  
obj = -1427.727089, rho = -1.524152  
nSV = 124, nBSV = 111  
Total nSV = 124

.\*

optimization finished, #iter = 271  
nu = 0.560000  
obj = -1407.873540, rho = 1.579128  
nSV = 117, nBSV = 106  
Total nSV = 117

\*.\*

optimization finished, #iter = 223  
nu = 0.635222  
obj = -1512.655157, rho = -0.459885  
nSV = 132, nBSV = 120  
Total nSV = 132  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 87% (174/200) (classification)

Accuracy = 86% (172/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 83.5% (167/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 83% (166/200) (classification)

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optimization finished, #iter = 182  
nu = 0.510123  
obj = -1177.283003, rho = -3.086743  
nSV = 107, nBSV = 95  
Total nSV = 107

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optimization finished, #iter = 358  
nu = 0.509344  
obj = -1204.483161, rho = -0.037015  
nSV = 108, nBSV = 96  
Total nSV = 108

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optimization finished, #iter = 348  
nu = 0.494550  
obj = -1145.516359, rho = -0.501031  
nSV = 107, nBSV = 89  
Total nSV = 107

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optimization finished, #iter = 618  
nu = 0.495507  
obj = -1120.594075, rho = 1.034148  
nSV = 107, nBSV = 90  
Total nSV = 107

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optimization finished, #iter = 379

nu = 0.519745  
obj = -1192.642568, rho = -0.556057  
nSV = 111, nBSV = 95  
Total nSV = 111  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 95% (190/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 95.5% (191/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
.\*.\*

optimization finished, #iter = 514  
nu = 0.411619  
obj = -907.356323, rho = -1.963569  
nSV = 95, nBSV = 69  
Total nSV = 95  
.\*.\*

optimization finished, #iter = 502  
nu = 0.415630  
obj = -963.940218, rho = 0.850561  
nSV = 97, nBSV = 70  
Total nSV = 97  
..\*.\*

optimization finished, #iter = 629  
nu = 0.402358  
obj = -904.681286, rho = 0.224593  
nSV = 93, nBSV = 68  
Total nSV = 93  
.\*.\*

optimization finished, #iter = 450

nu = 0.389870  
obj = -871.241599, rho = 0.746816  
nSV = 91, nBSV = 67  
Total nSV = 91  
..\*.\*  
optimization finished, #iter = 817  
nu = 0.412775  
obj = -921.581758, rho = -0.648902  
nSV = 97, nBSV = 67  
Total nSV = 97  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 95% (190/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 96% (192/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
..\*.\*  
optimization finished, #iter = 673  
nu = 0.326889  
obj = -692.164367, rho = -1.012150  
nSV = 85, nBSV = 46  
Total nSV = 85  
.\*.\*  
optimization finished, #iter = 491  
nu = 0.338387  
obj = -772.351696, rho = 0.678182  
nSV = 84, nBSV = 50  
Total nSV = 84  
..\*.\*  
optimization finished, #iter = 684

nu = 0.326960  
obj = -718.555655, rho = 0.052715  
nSV = 88, nBSV = 48  
Total nSV = 88  
.\*.\*  
optimization finished, #iter = 648  
nu = 0.316323  
obj = -679.436449, rho = 0.330333  
nSV = 87, nBSV = 49  
Total nSV = 87  
..\*.\*  
optimization finished, #iter = 883  
nu = 0.333593  
obj = -713.632785, rho = -0.477391  
nSV = 85, nBSV = 46  
Total nSV = 85  
Accuracy = 92% (184/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 95% (190/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
..\*.\*.\*  
optimization finished, #iter = 893  
nu = 0.257442  
obj = -511.006856, rho = -0.317757  
nSV = 92, nBSV = 33  
Total nSV = 92  
..\*.\*  
optimization finished, #iter = 805

```
nu = 0.275204
obj = -596.985525, rho = 0.641863
nSV = 90, nBSV = 30
Total nSV = 90
..*.*
optimization finished, #iter = 786
nu = 0.266203
obj = -555.552721, rho = 0.090063
nSV = 85, nBSV = 34
Total nSV = 85
..*.*
optimization finished, #iter = 676
nu = 0.257829
obj = -505.588735, rho = 0.301753
nSV = 86, nBSV = 30
Total nSV = 86
..*.*
optimization finished, #iter = 798
nu = 0.255304
obj = -530.703873, rho = -0.035294
nSV = 89, nBSV = 31
Total nSV = 89
Accuracy = 90.5% (181/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 88% (176/200) (classification)
Accuracy = 85% (170/200) (classification)
Accuracy = 90.5% (181/200) (classification)
Accuracy = 92% (184/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 87% (174/200) (classification)
Accuracy = 90.5% (181/200) (classification)
Accuracy = 89.5% (179/200) (classification)
Accuracy = 88% (176/200) (classification)
Accuracy = 89.5% (179/200) (classification)
Accuracy = 94% (188/200) (classification)
Accuracy = 91.5% (183/200) (classification)
Accuracy = 90% (180/200) (classification)
Accuracy = 87.5% (175/200) (classification)
Accuracy = 92% (184/200) (classification)
Accuracy = 89% (178/200) (classification)
Accuracy = 87.5% (175/200) (classification)
...*.*
optimization finished, #iter = 945
```

nu = 0.180119  
obj = -319.006929, rho = 0.121297  
nSV = 100, nBSV = 10  
Total nSV = 100  
..\*.\*  
optimization finished, #iter = 797  
nu = 0.205042  
obj = -421.942094, rho = 0.493075  
nSV = 104, nBSV = 18  
Total nSV = 104  
.\*.\*  
optimization finished, #iter = 573  
nu = 0.211137  
obj = -396.790973, rho = 0.094238  
nSV = 88, nBSV = 20  
Total nSV = 88  
.\*.\*  
optimization finished, #iter = 632  
nu = 0.184730  
obj = -328.873463, rho = 0.361187  
nSV = 88, nBSV = 11  
Total nSV = 88  
.\*.\*  
optimization finished, #iter = 668  
nu = 0.192367  
obj = -356.778530, rho = 0.102070  
nSV = 98, nBSV = 14  
Total nSV = 98  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 87% (174/200) (classification)

Accuracy = 83.5% (167/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
..\*.\*  
optimization finished, #iter = 847  
nu = 0.111350  
obj = -185.447287, rho = 0.237064  
nSV = 119, nBSV = 1  
Total nSV = 119  
..\*.\*  
optimization finished, #iter = 650  
nu = 0.146618  
obj = -264.727139, rho = 0.433544  
nSV = 117, nBSV = 6  
Total nSV = 117  
..\*.\*  
optimization finished, #iter = 748  
nu = 0.148772  
obj = -245.158586, rho = 0.116607  
nSV = 104, nBSV = 4  
Total nSV = 104  
.\*.\*  
optimization finished, #iter = 551  
nu = 0.113338  
obj = -195.601658, rho = 0.415573  
nSV = 112, nBSV = 4  
Total nSV = 112  
..\*.\*  
optimization finished, #iter = 644  
nu = 0.123368  
obj = -211.580669, rho = 0.233131  
nSV = 118, nBSV = 5  
Total nSV = 118  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 81.5% (163/200) (classification)  
Accuracy = 83% (166/200) (classification)



Accuracy = 83.5% (167/200) (classification)  
Accuracy = 81.5% (163/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 82.5% (165/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 81.5% (163/200) (classification)  
Accuracy = 82% (164/200) (classification)

. \*. \*

optimization finished, #iter = 543

nu = 0.069741

obj = -111.591291, rho = 0.329300

nSV = 149, nBSV = 0

Total nSV = 149

. \*. \*

optimization finished, #iter = 509

nu = 0.091356

obj = -162.321650, rho = 0.374866

nSV = 146, nBSV = 2

Total nSV = 146

. \*. \*

optimization finished, #iter = 595

nu = 0.091976

obj = -147.163505, rho = 0.212470

nSV = 136, nBSV = 0

Total nSV = 136

. \*. \*

optimization finished, #iter = 516

nu = 0.076334

obj = -124.701141, rho = 0.430762

nSV = 145, nBSV = 1

Total nSV = 145

. \*. \*

optimization finished, #iter = 547

nu = 0.078412

obj = -125.464543, rho = 0.282825

nSV = 148, nBSV = 0

Total nSV = 148

Accuracy = 80.5% (161/200) (classification)

Accuracy = 81.5% (163/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 80% (160/200) (classification)  
Accuracy = 81% (162/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 77% (154/200) (classification)

.\*.\*

optimization finished, #iter = 444

nu = 0.051809

obj = -82.893372, rho = 0.373676

nSV = 175, nBSV = 0

Total nSV = 175

.\*.\*

optimization finished, #iter = 462

nu = 0.067675

obj = -108.284276, rho = 0.364580

nSV = 172, nBSV = 0

Total nSV = 172

.\*.\*

optimization finished, #iter = 454

nu = 0.064032

obj = -102.450971, rho = 0.274335

nSV = 173, nBSV = 0

Total nSV = 173

.\*.\*

optimization finished, #iter = 484

nu = 0.055543

obj = -88.870972, rho = 0.430620

nSV = 169, nBSV = 0

Total nSV = 169

.\*.\*

optimization finished, #iter = 455

nu = 0.055347

obj = -88.555952, rho = 0.328984

nSV = 177, nBSV = 0

Total nSV = 177

Accuracy = 76.5% (153/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 77.5% (155/200) (classification)

Accuracy = 76% (152/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 75% (150/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 78% (156/200) (classification)

Accuracy = 75.5% (151/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 76% (152/200) (classification)

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optimization finished, #iter = 411

nu = 0.047690

obj = -76.303949, rho = 0.371490

nSV = 193, nBSV = 0

Total nSV = 193

. \*. \*

optimization finished, #iter = 426

nu = 0.053959

obj = -86.333932, rho = 0.364099

nSV = 192, nBSV = 0

Total nSV = 192

. \*. \*

optimization finished, #iter = 430

nu = 0.055655

obj = -89.044535, rho = 0.288381

nSV = 188, nBSV = 0

Total nSV = 188

. \*. \*

optimization finished, #iter = 400

nu = 0.048901

obj = -78.241750, rho = 0.422762

nSV = 191, nBSV = 0

Total nSV = 191

. \*. \*

optimization finished, #iter = 429

nu = 0.050544

obj = -80.869176, rho = 0.337580

nSV = 192, nBSV = 0

Total nSV = 192

Accuracy = 74% (148/200) (classification)

Accuracy = 75% (150/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 75% (150/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 77% (154/200) (classification)

Accuracy = 76% (152/200) (classification)

Accuracy = 70.5% (141/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 69% (138/200) (classification)

Accuracy = 73.5% (147/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 75.5% (151/200) (classification)

Accuracy = 77.5% (155/200) (classification)

Accuracy = 76.5% (153/200) (classification)

Accuracy = 68.5% (137/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 76.5% (153/200) (classification)

Accuracy = 70% (140/200) (classification)

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optimization finished, #iter = 396

nu = 0.048662

obj = -77.859532, rho = 0.383729

nSV = 199, nBSV = 0

Total nSV = 199

. \*. \*

optimization finished, #iter = 403

nu = 0.051513

obj = -82.418921, rho = 0.377600

nSV = 200, nBSV = 0

Total nSV = 200

. \*. \*

optimization finished, #iter = 419

nu = 0.055245

obj = -88.391509, rho = 0.290267

nSV = 199, nBSV = 0

Total nSV = 199

. \*. \*

optimization finished, #iter = 463

nu = 0.048667

obj = -77.868605, rho = 0.423678

nSV = 198, nBSV = 0

Total nSV = 198

. \*. \*

optimization finished, #iter = 441

nu = 0.052383

obj = -83.812354, rho = 0.315646

nSV = 200, nBSV = 0

Total nSV = 200

Accuracy = 72% (144/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 75.5% (151/200) (classification)

Accuracy = 70.5% (141/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 68.5% (137/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 74.5% (149/200) (classification)

Accuracy = 73.5% (147/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 66% (132/200) (classification)

Accuracy = 69.5% (139/200) (classification)

Accuracy = 70.5% (141/200) (classification)

Accuracy = 67% (134/200) (classification)

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optimization finished, #iter = 327

nu = 0.580000

obj = -3286.013986, rho = -4.222860

nSV = 121, nBSV = 112

Total nSV = 121

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optimization finished, #iter = 241

nu = 0.600000

obj = -3383.651906, rho = 0.005471

nSV = 123, nBSV = 116

Total nSV = 123

\*

optimization finished, #iter = 181

nu = 0.655286

obj = -3409.177456, rho = -2.474386

nSV = 135, nBSV = 128

Total nSV = 135

.\*

optimization finished, #iter = 328

nu = 0.560000

obj = -3188.753549, rho = 2.378035

nSV = 117, nBSV = 106

Total nSV = 117

.\*

optimization finished, #iter = 310

nu = 0.690000

obj = -3631.078069, rho = -0.443658

nSV = 142, nBSV = 135

Total nSV = 142

Accuracy = 72% (144/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 71.5% (143/200) (classification)

Accuracy = 83.5% (167/200) (classification)

Accuracy = 70.5% (141/200) (classification)

Accuracy = 78% (156/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 83.5% (167/200) (classification)

Accuracy = 67% (134/200) (classification)

Accuracy = 66% (132/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 83% (166/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 77% (154/200) (classification)

Accuracy = 83% (166/200) (classification)

Accuracy = 66.5% (133/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 65.5% (131/200) (classification)

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optimization finished, #iter = 312

nu = 0.559340

obj = -2887.800350, rho = -4.752004

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nSV = 117, nBSV = 108
Total nSV = 117
.*
optimization finished, #iter = 259
nu = 0.585576
obj = -2941.795910, rho = -0.159114
nSV = 120, nBSV = 111
Total nSV = 120
.**.*
optimization finished, #iter = 361
nu = 0.581536
obj = -2833.681999, rho = -2.782103
nSV = 125, nBSV = 112
Total nSV = 125
.*
optimization finished, #iter = 363
nu = 0.560000
obj = -2797.393596, rho = 2.458265
nSV = 118, nBSV = 107
Total nSV = 118
*.*
optimization finished, #iter = 275
nu = 0.625541
obj = -2997.266694, rho = -0.428482
nSV = 129, nBSV = 120
Total nSV = 129
Accuracy = 88% (176/200) (classification)
Accuracy = 87% (174/200) (classification)
Accuracy = 87% (174/200) (classification)
Accuracy = 92% (184/200) (classification)
Accuracy = 85.5% (171/200) (classification)
Accuracy = 85.5% (171/200) (classification)
Accuracy = 86% (172/200) (classification)
Accuracy = 95% (190/200) (classification)
Accuracy = 79.5% (159/200) (classification)
Accuracy = 86.5% (173/200) (classification)
Accuracy = 83.5% (167/200) (classification)
Accuracy = 95.5% (191/200) (classification)
Accuracy = 80.5% (161/200) (classification)
Accuracy = 90% (180/200) (classification)
Accuracy = 87.5% (175/200) (classification)
Accuracy = 95.5% (191/200) (classification)
Accuracy = 83% (166/200) (classification)
Accuracy = 87.5% (175/200) (classification)
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Accuracy = 87.5% (175/200) (classification)

Accuracy = 83% (166/200) (classification)

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optimization finished, #iter = 450

nu = 0.499815

obj = -2333.380683, rho = -5.647701

nSV = 105, nBSV = 91

Total nSV = 105

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optimization finished, #iter = 524

nu = 0.502267

obj = -2354.084240, rho = -0.557927

nSV = 106, nBSV = 89

Total nSV = 106

.. \*

optimization finished, #iter = 592

nu = 0.484237

obj = -2241.398587, rho = -1.162026

nSV = 106, nBSV = 90

Total nSV = 106

.. \*. \*

optimization finished, #iter = 654

nu = 0.482059

obj = -2193.599365, rho = 1.376766

nSV = 107, nBSV = 90

Total nSV = 107

. \*

optimization finished, #iter = 281

nu = 0.503587

obj = -2349.072125, rho = -1.371892

nSV = 107, nBSV = 96

Total nSV = 107

Accuracy = 93% (186/200) (classification)

Accuracy = 89.5% (179/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 95.5% (191/200) (classification)

Accuracy = 92.5% (185/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 94.5% (189/200) (classification)



Accuracy = 92% (184/200) (classification)  
Accuracy = 96.5% (193/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 92% (184/200) (classification)

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WARNING: using -h 0 may be faster

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optimization finished, #iter = 495  
nu = 0.393629  
obj = -1786.798944, rho = -3.824565  
nSV = 89, nBSV = 70  
Total nSV = 89

.\*.\*

optimization finished, #iter = 454  
nu = 0.397555  
obj = -1858.048948, rho = 0.550241  
nSV = 89, nBSV = 70  
Total nSV = 89

.\*.\*

optimization finished, #iter = 565  
nu = 0.380884  
obj = -1741.409634, rho = 0.110577  
nSV = 89, nBSV = 68  
Total nSV = 89

..\*.\*

optimization finished, #iter = 612  
nu = 0.372691  
obj = -1679.103290, rho = 0.806553  
nSV = 86, nBSV = 67  
Total nSV = 86

..\*..\*

optimization finished, #iter = 925  
nu = 0.391856  
obj = -1796.813756, rho = -1.355009  
nSV = 90, nBSV = 68  
Total nSV = 90

Accuracy = 92.5% (185/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 90.5% (181/200) (classification)

Accuracy = 93% (186/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 97% (194/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 92.5% (185/200) (classification)

..\*.\*

optimization finished, #iter = 850  
nu = 0.301076  
obj = -1308.133402, rho = -2.209553  
nSV = 80, nBSV = 45  
Total nSV = 80

...\*.\*

optimization finished, #iter = 1157  
nu = 0.317600  
obj = -1464.796430, rho = 1.009136  
nSV = 79, nBSV = 48  
Total nSV = 79

..\*.\*

optimization finished, #iter = 609  
nu = 0.301462  
obj = -1357.383064, rho = 0.360330  
nSV = 73, nBSV = 48  
Total nSV = 73

..\*.\*

optimization finished, #iter = 708  
nu = 0.293673  
obj = -1268.378250, rho = 0.738274  
nSV = 74, nBSV = 45  
Total nSV = 74

...\*.\*

optimization finished, #iter = 1023  
nu = 0.306651  
obj = -1367.810272, rho = -1.110187

nSV = 79, nBSV = 45  
Total nSV = 79  
Accuracy = 94% (188/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 97% (194/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 93% (186/200) (classification)  
..\*.\*  
optimization finished, #iter = 957  
nu = 0.228580  
obj = -974.343683, rho = -1.098212  
nSV = 72, nBSV = 31  
Total nSV = 72  
....\*.\*  
optimization finished, #iter = 1505  
nu = 0.255987  
obj = -1151.923692, rho = 0.867162  
nSV = 80, nBSV = 31  
Total nSV = 80  
..\*.\*  
optimization finished, #iter = 663  
nu = 0.236962  
obj = -1044.848514, rho = -0.018975  
nSV = 75, nBSV = 35  
Total nSV = 75  
...\*.\*  
optimization finished, #iter = 1015  
nu = 0.232171  
obj = -929.216622, rho = 0.034026

nSV = 69, nBSV = 28  
Total nSV = 69  
..\*.\*  
optimization finished, #iter = 956  
nu = 0.236204  
obj = -1021.068797, rho = -0.609286  
nSV = 75, nBSV = 30  
Total nSV = 75  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 91% (182/200) (classification)  
...\*...  
optimization finished, #iter = 1315  
nu = 0.171888  
obj = -638.913098, rho = -0.348495  
nSV = 79, nBSV = 15  
Total nSV = 79  
...\*...  
optimization finished, #iter = 1194  
nu = 0.199302  
obj = -847.985502, rho = 0.564280  
nSV = 83, nBSV = 20  
Total nSV = 83  
..\*.\*  
optimization finished, #iter = 627  
nu = 0.189930  
obj = -745.669390, rho = 0.063318

nSV = 71, nBSV = 21

Total nSV = 71

..\*.\*

optimization finished, #iter = 946

nu = 0.169267

obj = -640.334552, rho = 0.179163

nSV = 74, nBSV = 11

Total nSV = 74

...\*.\*

optimization finished, #iter = 933

nu = 0.178007

obj = -723.322264, rho = -0.315565

nSV = 77, nBSV = 17

Total nSV = 77

Accuracy = 89% (178/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 91% (182/200) (classification)

Accuracy = 87.5% (175/200) (classification)

Accuracy = 85.5% (171/200) (classification)

Accuracy = 88% (176/200) (classification)

Accuracy = 89.5% (179/200) (classification)

Accuracy = 90.5% (181/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 90% (180/200) (classification)

Accuracy = 90% (180/200) (classification)

Accuracy = 89.5% (179/200) (classification)

Accuracy = 90% (180/200) (classification)

Accuracy = 89% (178/200) (classification)

Accuracy = 91% (182/200) (classification)

Accuracy = 89.5% (179/200) (classification)

Accuracy = 86.5% (173/200) (classification)

Accuracy = 88% (176/200) (classification)

Accuracy = 87% (174/200) (classification)

Accuracy = 87.5% (175/200) (classification)

...\*...\*

optimization finished, #iter = 1249

nu = 0.104177

obj = -356.963928, rho = 0.079451

nSV = 99, nBSV = 2

Total nSV = 99

..\*.\*

optimization finished, #iter = 783

nu = 0.141848

obj = -568.015852, rho = 0.490922

```
nSV = 92, nBSV = 12
Total nSV = 92
... * .
optimization finished, #iter = 860
nu = 0.135678
obj = -449.692334, rho = 0.088381
nSV = 80, nBSV = 5
Total nSV = 80
... * .
optimization finished, #iter = 931
nu = 0.105829
obj = -372.431710, rho = 0.281113
nSV = 85, nBSV = 4
Total nSV = 85
.. * ..
optimization finished, #iter = 847
nu = 0.117263
obj = -424.556684, rho = 0.040578
nSV = 92, nBSV = 6
Total nSV = 92
Accuracy = 83.5% (167/200) (classification)
Accuracy = 88% (176/200) (classification)
Accuracy = 87.5% (175/200) (classification)
Accuracy = 86% (172/200) (classification)
Accuracy = 83.5% (167/200) (classification)
Accuracy = 85.5% (171/200) (classification)
Accuracy = 87% (174/200) (classification)
Accuracy = 87.5% (175/200) (classification)
Accuracy = 85.5% (171/200) (classification)
Accuracy = 86% (172/200) (classification)
Accuracy = 85.5% (171/200) (classification)
Accuracy = 84.5% (169/200) (classification)
Accuracy = 86% (172/200) (classification)
Accuracy = 85% (170/200) (classification)
Accuracy = 86.5% (173/200) (classification)
Accuracy = 86.5% (173/200) (classification)
Accuracy = 83.5% (167/200) (classification)
Accuracy = 82.5% (165/200) (classification)
Accuracy = 83.5% (167/200) (classification)
Accuracy = 84.5% (169/200) (classification)
.. * .
optimization finished, #iter = 717
nu = 0.059990
obj = -194.080117, rho = 0.232489
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```
nSV = 114, nBSV = 1
Total nSV = 114
..*.*
optimization finished, #iter = 683
nu = 0.084208
obj = -313.574536, rho = 0.480512
nSV = 116, nBSV = 3
Total nSV = 116
..*.*
optimization finished, #iter = 674
nu = 0.077625
obj = -248.395888, rho = 0.119683
nSV = 101, nBSV = 0
Total nSV = 101
..*
optimization finished, #iter = 595
nu = 0.063140
obj = -213.619646, rho = 0.409578
nSV = 106, nBSV = 2
Total nSV = 106
..*.*
optimization finished, #iter = 751
nu = 0.069835
obj = -224.160276, rho = 0.199458
nSV = 119, nBSV = 1
Total nSV = 119
Accuracy = 81.5% (163/200) (classification)
Accuracy = 84.5% (169/200) (classification)
Accuracy = 86.5% (173/200) (classification)
Accuracy = 84.5% (169/200) (classification)
Accuracy = 82% (164/200) (classification)
Accuracy = 84% (168/200) (classification)
Accuracy = 82.5% (165/200) (classification)
Accuracy = 85.5% (171/200) (classification)
Accuracy = 81% (162/200) (classification)
Accuracy = 82.5% (165/200) (classification)
Accuracy = 83.5% (167/200) (classification)
Accuracy = 82% (164/200) (classification)
Accuracy = 84% (168/200) (classification)
Accuracy = 84% (168/200) (classification)
Accuracy = 85% (170/200) (classification)
Accuracy = 82.5% (165/200) (classification)
Accuracy = 79% (158/200) (classification)
Accuracy = 78% (156/200) (classification)
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Accuracy = 81.5% (163/200) (classification)

Accuracy = 81.5% (163/200) (classification)

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optimization finished, #iter = 543

nu = 0.034871

obj = -111.591291, rho = 0.329300

nSV = 149, nBSV = 0

Total nSV = 149

. \*. \*

optimization finished, #iter = 540

nu = 0.053056

obj = -187.081806, rho = 0.406223

nSV = 145, nBSV = 2

Total nSV = 145

. \*. \*

optimization finished, #iter = 595

nu = 0.045988

obj = -147.163505, rho = 0.212470

nSV = 136, nBSV = 0

Total nSV = 136

. \*. \*

optimization finished, #iter = 502

nu = 0.039420

obj = -126.146828, rho = 0.431504

nSV = 139, nBSV = 0

Total nSV = 139

. \*. \*

optimization finished, #iter = 547

nu = 0.039206

obj = -125.464543, rho = 0.282825

nSV = 148, nBSV = 0

Total nSV = 148

Accuracy = 80% (160/200) (classification)

Accuracy = 81.5% (163/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 80.5% (161/200) (classification)

Accuracy = 77% (154/200) (classification)

Accuracy = 79.5% (159/200) (classification)

Accuracy = 80% (160/200) (classification)

Accuracy = 78.5% (157/200) (classification)

Accuracy = 76.5% (153/200) (classification)



Accuracy = 80.5% (161/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 77.5% (155/200) (classification)

. \*. \*

optimization finished, #iter = 444  
nu = 0.025905  
obj = -82.893372, rho = 0.373676  
nSV = 175, nBSV = 0  
Total nSV = 175

. \*. \*

optimization finished, #iter = 462  
nu = 0.033838  
obj = -108.284276, rho = 0.364580  
nSV = 172, nBSV = 0  
Total nSV = 172

. \*. \*

optimization finished, #iter = 454  
nu = 0.032016  
obj = -102.450971, rho = 0.274335  
nSV = 173, nBSV = 0  
Total nSV = 173

. \*. \*

optimization finished, #iter = 484  
nu = 0.027772  
obj = -88.870972, rho = 0.430620  
nSV = 169, nBSV = 0  
Total nSV = 169

. \*. \*

optimization finished, #iter = 455  
nu = 0.027674  
obj = -88.555952, rho = 0.328984  
nSV = 177, nBSV = 0  
Total nSV = 177

Accuracy = 76.5% (153/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 78.5% (157/200) (classification)

Accuracy = 80% (160/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 76% (152/200) (classification)

. \*. \*

optimization finished, #iter = 411  
nu = 0.023845  
obj = -76.303949, rho = 0.371490  
nSV = 193, nBSV = 0  
Total nSV = 193

. \*. \*

optimization finished, #iter = 426  
nu = 0.026980  
obj = -86.333932, rho = 0.364099  
nSV = 192, nBSV = 0  
Total nSV = 192

. \*. \*

optimization finished, #iter = 430  
nu = 0.027828  
obj = -89.044535, rho = 0.288381  
nSV = 188, nBSV = 0  
Total nSV = 188

. \*. \*

optimization finished, #iter = 400  
nu = 0.024450  
obj = -78.241750, rho = 0.422762  
nSV = 191, nBSV = 0  
Total nSV = 191

. \*. \*

optimization finished, #iter = 429  
nu = 0.025272  
obj = -80.869176, rho = 0.337580  
nSV = 192, nBSV = 0  
Total nSV = 192

Accuracy = 74% (148/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 69% (138/200) (classification)  
Accuracy = 73.5% (147/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 68.5% (137/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 70% (140/200) (classification)

.\*

optimization finished, #iter = 396  
nu = 0.024331  
obj = -77.859532, rho = 0.383729  
nSV = 199, nBSV = 0  
Total nSV = 199

.\*.\*

optimization finished, #iter = 403  
nu = 0.025757  
obj = -82.418921, rho = 0.377600  
nSV = 200, nBSV = 0  
Total nSV = 200

.\*.\*

optimization finished, #iter = 419  
nu = 0.027622  
obj = -88.391509, rho = 0.290267  
nSV = 199, nBSV = 0  
Total nSV = 199

.\*.\*

optimization finished, #iter = 463  
nu = 0.024333  
obj = -77.868605, rho = 0.423678  
nSV = 198, nBSV = 0  
Total nSV = 198

. \*. \*

optimization finished, #iter = 441

nu = 0.026191

obj = -83.812354, rho = 0.315646

nSV = 200, nBSV = 0

Total nSV = 200

Accuracy = 72% (144/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 72% (144/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 75.5% (151/200) (classification)

Accuracy = 70.5% (141/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 65% (130/200) (classification)

Accuracy = 70% (140/200) (classification)

Accuracy = 65.5% (131/200) (classification)

Accuracy = 68.5% (137/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 74.5% (149/200) (classification)

Accuracy = 73.5% (147/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 66% (132/200) (classification)

Accuracy = 69.5% (139/200) (classification)

Accuracy = 70.5% (141/200) (classification)

Accuracy = 67% (134/200) (classification)

. \*

optimization finished, #iter = 310

nu = 0.554986

obj = -5780.125367, rho = -6.023476

nSV = 114, nBSV = 106

Total nSV = 114

. \*

optimization finished, #iter = 338

nu = 0.587889

obj = -5865.695275, rho = 0.078956

nSV = 121, nBSV = 113

Total nSV = 121

. \*. \*

optimization finished, #iter = 450

nu = 0.577946

obj = -5660.134294, rho = -3.522046

nSV = 123, nBSV = 110

Total nSV = 123

.\*

optimization finished, #iter = 354  
nu = 0.560000  
obj = -5587.014059, rho = 3.740641  
nSV = 117, nBSV = 107  
Total nSV = 117

.\*.\*

optimization finished, #iter = 426  
nu = 0.619039  
obj = -5970.567642, rho = -0.234140  
nSV = 128, nBSV = 118  
Total nSV = 128

Accuracy = 90.5% (181/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 95.5% (191/200) (classification)  
Accuracy = 82.5% (165/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 96% (192/200) (classification)  
Accuracy = 82.5% (165/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 84.5% (169/200) (classification)

..\*

optimization finished, #iter = 509  
nu = 0.494578  
obj = -4676.284081, rho = -8.102811  
nSV = 104, nBSV = 91  
Total nSV = 104

.

WARNING: using -h 0 may be faster

.\*.\*

optimization finished, #iter = 503  
nu = 0.499515  
obj = -4659.666870, rho = -0.541369

```
nSV = 104, nBSV = 92
Total nSV = 104
..*.*
optimization finished, #iter = 755
nu = 0.481693
obj = -4447.863643, rho = -2.237769
nSV = 103, nBSV = 88
Total nSV = 103
...*..*
optimization finished, #iter = 1173
nu = 0.474019
obj = -4361.732656, rho = 1.775496
nSV = 104, nBSV = 87
Total nSV = 104
.*.*
optimization finished, #iter = 436
nu = 0.499388
obj = -4671.410260, rho = -1.492376
nSV = 105, nBSV = 93
Total nSV = 105
Accuracy = 93% (186/200) (classification)
Accuracy = 89% (178/200) (classification)
Accuracy = 92.5% (185/200) (classification)
Accuracy = 93% (186/200) (classification)
Accuracy = 94% (188/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 91.5% (183/200) (classification)
Accuracy = 95.5% (191/200) (classification)
Accuracy = 94% (188/200) (classification)
Accuracy = 95% (190/200) (classification)
Accuracy = 92% (184/200) (classification)
Accuracy = 95% (190/200) (classification)
Accuracy = 93% (186/200) (classification)
Accuracy = 96.5% (193/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 94% (188/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 94% (188/200) (classification)
Accuracy = 93% (186/200) (classification)
Accuracy = 91.5% (183/200) (classification)
.
WARNING: using -h 0 may be faster
*.*
optimization finished, #iter = 580
```

```
nu = 0.387016
obj = -3601.848599, rho = -6.740970
nSV = 83, nBSV = 68
Total nSV = 83
..*.*
optimization finished, #iter = 665
nu = 0.387027
obj = -3651.156071, rho = -0.151249
nSV = 85, nBSV = 70
Total nSV = 85
.
WARNING: using -h 0 may be faster
*.*
optimization finished, #iter = 462
nu = 0.372429
obj = -3423.902150, rho = -0.400558
nSV = 83, nBSV = 69
Total nSV = 83
..*...*
optimization finished, #iter = 1003
nu = 0.363661
obj = -3307.886898, rho = 0.558664
nSV = 83, nBSV = 63
Total nSV = 83
.*.*
optimization finished, #iter = 549
nu = 0.387524
obj = -3596.734121, rho = -2.414915
nSV = 86, nBSV = 71
Total nSV = 86
Accuracy = 93% (186/200) (classification)
Accuracy = 90% (180/200) (classification)
Accuracy = 92.5% (185/200) (classification)
Accuracy = 91.5% (183/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 95% (190/200) (classification)
Accuracy = 93% (186/200) (classification)
Accuracy = 95% (190/200) (classification)
Accuracy = 92.5% (185/200) (classification)
Accuracy = 94.5% (189/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 97% (194/200) (classification)
```

Accuracy = 95% (190/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 93% (186/200) (classification)  
... \* ...  
optimization finished, #iter = 1242  
nu = 0.295989  
obj = -2653.396379, rho = -4.519186  
nSV = 72, nBSV = 50  
Total nSV = 72  
.... \* ...  
optimization finished, #iter = 1441  
nu = 0.306459  
obj = -2862.023468, rho = 0.902099  
nSV = 76, nBSV = 49  
Total nSV = 76  
.. \* ..  
optimization finished, #iter = 857  
nu = 0.290555  
obj = -2647.113343, rho = 0.585887  
nSV = 71, nBSV = 49  
Total nSV = 71  
.. \* ..  
optimization finished, #iter = 904  
nu = 0.286119  
obj = -2450.355159, rho = 1.313970  
nSV = 68, nBSV = 45  
Total nSV = 68  
... \* .  
optimization finished, #iter = 916  
nu = 0.297777  
obj = -2745.587151, rho = -2.725765  
nSV = 72, nBSV = 50  
Total nSV = 72  
Accuracy = 94% (188/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 94% (188/200) (classification)



Accuracy = 92.5% (185/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 97.5% (195/200) (classification)  
Accuracy = 95.5% (191/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 94% (188/200) (classification)

... \* .. \*

optimization finished, #iter = 1125  
nu = 0.212850  
obj = -1910.887538, rho = -2.671122  
nSV = 67, nBSV = 32  
Total nSV = 67

.... \* .. \*

optimization finished, #iter = 1318  
nu = 0.239827  
obj = -2257.394257, rho = 1.283531  
nSV = 69, nBSV = 35  
Total nSV = 69

.... \* ... \*

optimization finished, #iter = 1481  
nu = 0.223287  
obj = -2021.864123, rho = 0.061833  
nSV = 69, nBSV = 34  
Total nSV = 69

.... \* .. \*

optimization finished, #iter = 1316  
nu = 0.214021  
obj = -1752.022504, rho = -0.040985  
nSV = 58, nBSV = 29  
Total nSV = 58

.... \* .... \*

optimization finished, #iter = 1622  
nu = 0.229351  
obj = -2021.185932, rho = -1.507227  
nSV = 66, nBSV = 31  
Total nSV = 66

Accuracy = 93% (186/200) (classification)  
Accuracy = 91% (182/200) (classification)

Accuracy = 93.5% (187/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 97% (194/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 93% (186/200) (classification)

... \*. \*

optimization finished, #iter = 995

nu = 0.168220

obj = -1326.495482, rho = -1.606709

nSV = 60, nBSV = 18

Total nSV = 60

..... \*. \*

optimization finished, #iter = 1546

nu = 0.189514

obj = -1747.866300, rho = 0.735299

nSV = 69, nBSV = 22

Total nSV = 69

.. \*. \*

optimization finished, #iter = 791

nu = 0.177987

obj = -1498.190877, rho = 0.018165

nSV = 59, nBSV = 21

Total nSV = 59

.... \* ... \*

optimization finished, #iter = 1410

nu = 0.154130

obj = -1216.627574, rho = -0.118983

nSV = 61, nBSV = 13

Total nSV = 61

... \*. \*

optimization finished, #iter = 1108

```

nu = 0.169101
obj = -1451.782634, rho = -0.862543
nSV = 66, nBSV = 18
Total nSV = 66
Accuracy = 90.5% (181/200) (classification)
Accuracy = 90.5% (181/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 90.5% (181/200) (classification)
Accuracy = 88% (176/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 92.5% (185/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 93% (186/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 92% (184/200) (classification)
Accuracy = 91% (182/200) (classification)
Accuracy = 92% (184/200) (classification)
Accuracy = 92.5% (185/200) (classification)
Accuracy = 93% (186/200) (classification)
Accuracy = 87.5% (175/200) (classification)
Accuracy = 92% (184/200) (classification)
Accuracy = 91.5% (183/200) (classification)
Accuracy = 89% (178/200) (classification)
... * ... *
optimization finished, #iter = 1464
nu = 0.104532
obj = -753.656123, rho = -0.432513
nSV = 75, nBSV = 4
Total nSV = 75
... * . *
optimization finished, #iter = 881
nu = 0.139008
obj = -1218.274708, rho = 0.505172
nSV = 73, nBSV = 14
Total nSV = 73
... * ... *
optimization finished, #iter = 1253
nu = 0.128444
obj = -885.805407, rho = 0.140679
nSV = 70, nBSV = 8
Total nSV = 70
... * . *
optimization finished, #iter = 926

```

nu = 0.106359  
obj = -791.016580, rho = 0.147424  
nSV = 64, nBSV = 8  
Total nSV = 64  
... \* ...  
optimization finished, #iter = 1327  
nu = 0.124219  
obj = -911.515280, rho = -0.569171  
nSV = 68, nBSV = 4  
Total nSV = 68  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
... \* ..  
optimization finished, #iter = 1015  
nu = 0.057755  
obj = -393.382545, rho = 0.129696  
nSV = 88, nBSV = 1  
Total nSV = 88  
... \* .  
optimization finished, #iter = 901  
nu = 0.094703  
obj = -739.450333, rho = 0.539572  
nSV = 84, nBSV = 5  
Total nSV = 84  
... \* .  
optimization finished, #iter = 941

```
nu = 0.071386
obj = -456.912489, rho = 0.141244
nSV = 78, nBSV = 0
Total nSV = 78
..*.*
optimization finished, #iter = 749
nu = 0.060349
obj = -420.184313, rho = 0.303387
nSV = 79, nBSV = 2
Total nSV = 79
...*.*
optimization finished, #iter = 910
nu = 0.070925
obj = -482.271442, rho = -0.091270
nSV = 88, nBSV = 2
Total nSV = 88
Accuracy = 81.5% (163/200) (classification)
Accuracy = 86.5% (173/200) (classification)
Accuracy = 88% (176/200) (classification)
Accuracy = 84% (168/200) (classification)
Accuracy = 85% (170/200) (classification)
Accuracy = 84.5% (169/200) (classification)
Accuracy = 87.5% (175/200) (classification)
Accuracy = 87% (174/200) (classification)
Accuracy = 85% (170/200) (classification)
Accuracy = 84.5% (169/200) (classification)
Accuracy = 86% (172/200) (classification)
Accuracy = 85.5% (171/200) (classification)
Accuracy = 85% (170/200) (classification)
Accuracy = 85% (170/200) (classification)
Accuracy = 87% (174/200) (classification)
Accuracy = 86.5% (173/200) (classification)
Accuracy = 83% (166/200) (classification)
Accuracy = 81% (162/200) (classification)
Accuracy = 82% (164/200) (classification)
Accuracy = 84% (168/200) (classification)
..*.*
optimization finished, #iter = 816
nu = 0.030347
obj = -194.238282, rho = 0.233211
nSV = 115, nBSV = 0
Total nSV = 115
..*.*
optimization finished, #iter = 705
```

```
nu = 0.050260
obj = -391.950759, rho = 0.515376
nSV = 116, nBSV = 2
Total nSV = 116
..*.*
optimization finished, #iter = 674
nu = 0.038812
obj = -248.395888, rho = 0.119683
nSV = 101, nBSV = 0
Total nSV = 101
..*.*
optimization finished, #iter = 616
nu = 0.034343
obj = -219.813869, rho = 0.389660
nSV = 105, nBSV = 0
Total nSV = 105
..*.*
optimization finished, #iter = 743
nu = 0.035025
obj = -224.175020, rho = 0.198869
nSV = 118, nBSV = 0
Total nSV = 118
Accuracy = 82% (164/200) (classification)
Accuracy = 84.5% (169/200) (classification)
Accuracy = 86% (172/200) (classification)
Accuracy = 84.5% (169/200) (classification)
Accuracy = 83% (166/200) (classification)
Accuracy = 84% (168/200) (classification)
Accuracy = 81% (162/200) (classification)
Accuracy = 85.5% (171/200) (classification)
Accuracy = 81% (162/200) (classification)
Accuracy = 82.5% (165/200) (classification)
Accuracy = 82% (164/200) (classification)
Accuracy = 82% (164/200) (classification)
Accuracy = 84% (168/200) (classification)
Accuracy = 83% (166/200) (classification)
Accuracy = 85% (170/200) (classification)
Accuracy = 82.5% (165/200) (classification)
Accuracy = 79% (158/200) (classification)
Accuracy = 78% (156/200) (classification)
Accuracy = 81.5% (163/200) (classification)
Accuracy = 82% (164/200) (classification)
.*.*
optimization finished, #iter = 543
```

nu = 0.017435  
obj = -111.591291, rho = 0.329300  
nSV = 149, nBSV = 0  
Total nSV = 149  
.\*.\*  
optimization finished, #iter = 549  
nu = 0.031001  
obj = -199.283102, rho = 0.428017  
nSV = 141, nBSV = 1  
Total nSV = 141  
.\*.\*  
optimization finished, #iter = 595  
nu = 0.022994  
obj = -147.163505, rho = 0.212470  
nSV = 136, nBSV = 0  
Total nSV = 136  
.\*.\*  
optimization finished, #iter = 502  
nu = 0.019710  
obj = -126.146828, rho = 0.431504  
nSV = 139, nBSV = 0  
Total nSV = 139  
.\*.\*  
optimization finished, #iter = 547  
nu = 0.019603  
obj = -125.464543, rho = 0.282825  
nSV = 148, nBSV = 0  
Total nSV = 148  
Accuracy = 79% (158/200) (classification)  
Accuracy = 81.5% (163/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 81% (162/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 79% (158/200) (classification)

Accuracy = 77% (154/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 77.5% (155/200) (classification)

. \*. \*

optimization finished, #iter = 444  
nu = 0.012952  
obj = -82.893372, rho = 0.373676  
nSV = 175, nBSV = 0  
Total nSV = 175

. \*. \*

optimization finished, #iter = 462  
nu = 0.016919  
obj = -108.284276, rho = 0.364580  
nSV = 172, nBSV = 0  
Total nSV = 172

. \*. \*

optimization finished, #iter = 454  
nu = 0.016008  
obj = -102.450971, rho = 0.274335  
nSV = 173, nBSV = 0  
Total nSV = 173

. \*. \*

optimization finished, #iter = 484  
nu = 0.013886  
obj = -88.870972, rho = 0.430620  
nSV = 169, nBSV = 0  
Total nSV = 169

. \*. \*

optimization finished, #iter = 455  
nu = 0.013837  
obj = -88.555952, rho = 0.328984  
nSV = 177, nBSV = 0  
Total nSV = 177

Accuracy = 76.5% (153/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 74% (148/200) (classification)



Accuracy = 73% (146/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 76% (152/200) (classification)

. \*. \*

optimization finished, #iter = 411  
nu = 0.011923  
obj = -76.303949, rho = 0.371490  
nSV = 193, nBSV = 0  
Total nSV = 193

. \*. \*

optimization finished, #iter = 426  
nu = 0.013490  
obj = -86.333932, rho = 0.364099  
nSV = 192, nBSV = 0  
Total nSV = 192

. \*. \*

optimization finished, #iter = 430  
nu = 0.013914  
obj = -89.044535, rho = 0.288381  
nSV = 188, nBSV = 0  
Total nSV = 188

. \*. \*

optimization finished, #iter = 400  
nu = 0.012225  
obj = -78.241750, rho = 0.422762  
nSV = 191, nBSV = 0  
Total nSV = 191

. \*. \*

optimization finished, #iter = 429  
nu = 0.012636  
obj = -80.869176, rho = 0.337580  
nSV = 192, nBSV = 0  
Total nSV = 192

Accuracy = 74% (148/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75% (150/200) (classification)

Accuracy = 72.5% (145/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 69% (138/200) (classification)  
Accuracy = 73.5% (147/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 68.5% (137/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 70% (140/200) (classification)

. \*

optimization finished, #iter = 396  
nu = 0.012166  
obj = -77.859532, rho = 0.383729  
nSV = 199, nBSV = 0  
Total nSV = 199

. \* . \*

optimization finished, #iter = 403  
nu = 0.012878  
obj = -82.418921, rho = 0.377600  
nSV = 200, nBSV = 0  
Total nSV = 200

. \* . \*

optimization finished, #iter = 419  
nu = 0.013811  
obj = -88.391509, rho = 0.290267  
nSV = 199, nBSV = 0  
Total nSV = 199

. \* . \*

optimization finished, #iter = 463  
nu = 0.012167  
obj = -77.868605, rho = 0.423678  
nSV = 198, nBSV = 0  
Total nSV = 198

. \* . \*

optimization finished, #iter = 441  
nu = 0.013096  
obj = -83.812354, rho = 0.315646

nSV = 200, nBSV = 0  
Total nSV = 200  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 68.5% (137/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 74.5% (149/200) (classification)  
Accuracy = 73.5% (147/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 69.5% (139/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 67% (134/200) (classification)  
.\*.\*  
optimization finished, #iter = 629  
nu = 0.493724  
obj = -9416.250924, rho = -10.954998  
nSV = 104, nBSV = 93  
Total nSV = 104  
..\*.\*  
optimization finished, #iter = 745  
nu = 0.495418  
obj = -9287.225262, rho = 0.443101  
nSV = 104, nBSV = 94  
Total nSV = 104  
..\*.\*  
optimization finished, #iter = 781  
nu = 0.481408  
obj = -8895.924669, rho = -2.940764  
nSV = 102, nBSV = 90  
Total nSV = 102  
..\*.\*  
optimization finished, #iter = 704  
nu = 0.474006  
obj = -8751.164104, rho = 2.954756

nSV = 101, nBSV = 89  
Total nSV = 101  
..\*.\*  
optimization finished, #iter = 783  
nu = 0.496509  
obj = -9330.133773, rho = -2.517447  
nSV = 104, nBSV = 93  
Total nSV = 104  
Accuracy = 93% (186/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 95.5% (191/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 95% (190/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 95.5% (191/200) (classification)  
Accuracy = 95% (190/200) (classification)  
Accuracy = 98.5% (197/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 92% (184/200) (classification)  
..\*  
optimization finished, #iter = 510  
nu = 0.387440  
obj = -7317.933223, rho = -9.952822  
nSV = 85, nBSV = 70  
Total nSV = 85  
..\*.\*  
optimization finished, #iter = 728  
nu = 0.385603  
obj = -7248.880512, rho = -0.591908  
nSV = 84, nBSV = 70  
Total nSV = 84  
..\*  
optimization finished, #iter = 583  
nu = 0.367011  
obj = -6806.227421, rho = -1.297914

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nSV = 81, nBSV = 68
Total nSV = 81
..*.*
optimization finished, #iter = 813
nu = 0.361695
obj = -6632.087319, rho = 0.791518
nSV = 80, nBSV = 66
Total nSV = 80
..*.*
optimization finished, #iter = 625
nu = 0.385764
obj = -7243.036515, rho = -4.019192
nSV = 81, nBSV = 70
Total nSV = 81
Accuracy = 93.5% (187/200) (classification)
Accuracy = 90.5% (181/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 92% (184/200) (classification)
Accuracy = 94% (188/200) (classification)
Accuracy = 94% (188/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 95% (190/200) (classification)
Accuracy = 93% (186/200) (classification)
Accuracy = 95% (190/200) (classification)
Accuracy = 92.5% (185/200) (classification)
Accuracy = 94.5% (189/200) (classification)
Accuracy = 95% (190/200) (classification)
Accuracy = 97.5% (195/200) (classification)
Accuracy = 95.5% (191/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 92.5% (185/200) (classification)
Accuracy = 94% (188/200) (classification)
Accuracy = 93.5% (187/200) (classification)
Accuracy = 92.5% (185/200) (classification)
.....*.....*
optimization finished, #iter = 2233
nu = 0.297352
obj = -5520.727142, rho = -6.794133
nSV = 73, nBSV = 49
Total nSV = 73
....*.*
optimization finished, #iter = 1186
nu = 0.299987
obj = -5713.174971, rho = -0.734646

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nSV = 70, nBSV = 52

Total nSV = 70

.... \* .. \*

optimization finished, #iter = 1383

nu = 0.285291

obj = -5238.765731, rho = 0.203230

nSV = 69, nBSV = 47

Total nSV = 69

.. \* .. \*

optimization finished, #iter = 828

nu = 0.285655

obj = -4849.707578, rho = 2.157297

nSV = 66, nBSV = 47

Total nSV = 66

... \* . \*

optimization finished, #iter = 907

nu = 0.295388

obj = -5597.561322, rho = -3.717870

nSV = 68, nBSV = 52

Total nSV = 68

Accuracy = 94.5% (189/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 93% (186/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 93% (186/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 91% (182/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 93% (186/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 96% (192/200) (classification)

Accuracy = 97.5% (195/200) (classification)

Accuracy = 95% (190/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 95% (190/200) (classification)

Accuracy = 94% (188/200) (classification)

.... \* .. \*

optimization finished, #iter = 1129

nu = 0.217468

obj = -3937.051869, rho = -5.769930

nSV = 58, nBSV = 32

Total nSV = 58

.....\*.\*

optimization finished, #iter = 1779

nu = 0.232890

obj = -4488.884765, rho = 0.795336

nSV = 60, nBSV = 33

Total nSV = 60

....\*.....\*

optimization finished, #iter = 2042

nu = 0.215803

obj = -4038.581601, rho = 0.182837

nSV = 60, nBSV = 35

Total nSV = 60

...\*.\*

optimization finished, #iter = 999

nu = 0.202452

obj = -3424.903948, rho = 0.020737

nSV = 52, nBSV = 30

Total nSV = 52

.....\*.\*

optimization finished, #iter = 1287

nu = 0.230538

obj = -4154.761858, rho = -2.816497

nSV = 59, nBSV = 36

Total nSV = 59

Accuracy = 93.5% (187/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 91% (182/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 95.5% (191/200) (classification)

Accuracy = 93% (186/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 99% (198/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 92.5% (185/200) (classification)

Accuracy = 92.5% (185/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 95% (190/200) (classification)  
 Accuracy = 93.5% (187/200) (classification)  
 .... \* ..\*  
 optimization finished, #iter = 1284  
 nu = 0.162256  
 obj = -2772.091551, rho = -4.215215  
 nSV = 56, nBSV = 22  
 Total nSV = 56  
 .....\* ....\*  
 optimization finished, #iter = 2380  
 nu = 0.183344  
 obj = -3581.828328, rho = 1.117077  
 nSV = 58, nBSV = 23  
 Total nSV = 58  
 .... \* ..\*  
 optimization finished, #iter = 1164  
 nu = 0.171070  
 obj = -3056.358249, rho = 0.359206  
 nSV = 50, nBSV = 22  
 Total nSV = 50  
 .....\* ..\*  
 optimization finished, #iter = 1507  
 nu = 0.144524  
 obj = -2373.293836, rho = -0.037747  
 nSV = 49, nBSV = 17  
 Total nSV = 49  
 .....\* ...\*  
 optimization finished, #iter = 1741  
 nu = 0.166064  
 obj = -2962.533262, rho = -1.889684  
 nSV = 56, nBSV = 19  
 Total nSV = 56  
 Accuracy = 93% (186/200) (classification)  
 Accuracy = 92% (184/200) (classification)  
 Accuracy = 92.5% (185/200) (classification)  
 Accuracy = 91% (182/200) (classification)  
 Accuracy = 89% (178/200) (classification)  
 Accuracy = 92% (184/200) (classification)  
 Accuracy = 93% (186/200) (classification)  
 Accuracy = 95% (190/200) (classification)  
 Accuracy = 90.5% (181/200) (classification)  
 Accuracy = 92.5% (185/200) (classification)  
 Accuracy = 92.5% (185/200) (classification)  
 Accuracy = 94% (188/200) (classification)



Accuracy = 92.5% (185/200) (classification)  
Accuracy = 95.5% (191/200) (classification)  
Accuracy = 95% (190/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 91% (182/200) (classification)

.....\*...\*

optimization finished, #iter = 2166  
nu = 0.109702  
obj = -1680.387601, rho = -2.096676  
nSV = 56, nBSV = 8  
Total nSV = 56

.....\*...\*

optimization finished, #iter = 1640  
nu = 0.143698  
obj = -2671.347986, rho = 0.529827  
nSV = 63, nBSV = 14  
Total nSV = 63

....\*...\*

optimization finished, #iter = 1522  
nu = 0.129308  
obj = -1989.620284, rho = 0.500394  
nSV = 54, nBSV = 11  
Total nSV = 54

.....\*...\*

optimization finished, #iter = 1497  
nu = 0.100873  
obj = -1601.700434, rho = -0.281247  
nSV = 57, nBSV = 9  
Total nSV = 57

....\*...\*

optimization finished, #iter = 1429  
nu = 0.124351  
obj = -2050.617367, rho = -1.575571  
nSV = 59, nBSV = 13  
Total nSV = 59

Accuracy = 89.5% (179/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 88.5% (177/200) (classification)

Accuracy = 92.5% (185/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 91.5% (183/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 89.5% (179/200) (classification)

..... \* ..\*

optimization finished, #iter = 2002  
nu = 0.061275  
obj = -870.418282, rho = -0.532767  
nSV = 68, nBSV = 2  
Total nSV = 68

.... \* ..\*

optimization finished, #iter = 1226  
nu = 0.102009  
obj = -1764.240517, rho = 0.227648  
nSV = 68, nBSV = 10  
Total nSV = 68

.... \* ...\*

optimization finished, #iter = 1513  
nu = 0.072230  
obj = -947.145485, rho = 0.426963  
nSV = 65, nBSV = 3  
Total nSV = 65

... \* ..\*

optimization finished, #iter = 1178  
nu = 0.065543  
obj = -909.477977, rho = -0.035021  
nSV = 60, nBSV = 2  
Total nSV = 60

.... \* ..\*

optimization finished, #iter = 1156  
nu = 0.075433  
obj = -1098.336465, rho = -0.614063  
nSV = 68, nBSV = 3  
Total nSV = 68

Accuracy = 86% (172/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 83.5% (167/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 87% (174/200) (classification)

..\*..\*

optimization finished, #iter = 988

nu = 0.031910

obj = -408.476663, rho = 0.103403

nSV = 84, nBSV = 0

Total nSV = 84

....\*..\*

optimization finished, #iter = 1254

nu = 0.059591

obj = -955.862948, rho = 0.655077

nSV = 88, nBSV = 3

Total nSV = 88

...\*.\*

optimization finished, #iter = 941

nu = 0.035693

obj = -456.912489, rho = 0.141244

nSV = 78, nBSV = 0

Total nSV = 78

..\*.\*

optimization finished, #iter = 753

nu = 0.034137

obj = -464.361776, rho = 0.216130

nSV = 78, nBSV = 1

Total nSV = 78

...\*...\*

optimization finished, #iter = 1205

nu = 0.038903

obj = -497.960762, rho = -0.234410

nSV = 90, nBSV = 0

Total nSV = 90

Accuracy = 82% (164/200) (classification)

Accuracy = 86.5% (173/200) (classification)

Accuracy = 88% (176/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 84.5% (169/200) (classification)

Accuracy = 84.5% (169/200) (classification)

Accuracy = 86% (172/200) (classification)

Accuracy = 85.5% (171/200) (classification)

Accuracy = 84.5% (169/200) (classification)

Accuracy = 85% (170/200) (classification)

Accuracy = 86% (172/200) (classification)

Accuracy = 86% (172/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 85.5% (171/200) (classification)

Accuracy = 87% (174/200) (classification)

Accuracy = 87% (174/200) (classification)

Accuracy = 83% (166/200) (classification)

Accuracy = 80.5% (161/200) (classification)

Accuracy = 82% (164/200) (classification)

Accuracy = 82% (164/200) (classification)

..\*..\*

optimization finished, #iter = 816

nu = 0.015174

obj = -194.238282, rho = 0.233211

nSV = 115, nBSV = 0

Total nSV = 115

..\*..\*

optimization finished, #iter = 744

nu = 0.032607

obj = -504.938973, rho = 0.619605

nSV = 116, nBSV = 2

Total nSV = 116

..\*..\*

optimization finished, #iter = 674

nu = 0.019406

obj = -248.395888, rho = 0.119683

nSV = 101, nBSV = 0

Total nSV = 101

..\*.\*

optimization finished, #iter = 616

nu = 0.017171

obj = -219.813869, rho = 0.389660

nSV = 105, nBSV = 0

Total nSV = 105

..\*.\*

optimization finished, #iter = 743

nu = 0.017512

obj = -224.175020, rho = 0.198869

nSV = 118, nBSV = 0

Total nSV = 118

Accuracy = 81% (162/200) (classification)

Accuracy = 84.5% (169/200) (classification)

Accuracy = 86% (172/200) (classification)

Accuracy = 84.5% (169/200) (classification)

Accuracy = 83% (166/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 85.5% (171/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 82.5% (165/200) (classification)

Accuracy = 82% (164/200) (classification)

Accuracy = 82% (164/200) (classification)

Accuracy = 84% (168/200) (classification)

Accuracy = 81% (162/200) (classification)

Accuracy = 85% (170/200) (classification)

Accuracy = 82.5% (165/200) (classification)

Accuracy = 79% (158/200) (classification)

Accuracy = 78% (156/200) (classification)

Accuracy = 81.5% (163/200) (classification)

Accuracy = 82% (164/200) (classification)

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optimization finished, #iter = 543

nu = 0.008718

obj = -111.591291, rho = 0.329300

nSV = 149, nBSV = 0

Total nSV = 149

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optimization finished, #iter = 640

nu = 0.015570

obj = -199.311152, rho = 0.427190

nSV = 141, nBSV = 0

Total nSV = 141

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optimization finished, #iter = 595  
nu = 0.011497  
obj = -147.163505, rho = 0.212470  
nSV = 136, nBSV = 0  
Total nSV = 136

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optimization finished, #iter = 502  
nu = 0.009855  
obj = -126.146828, rho = 0.431504  
nSV = 139, nBSV = 0  
Total nSV = 139

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optimization finished, #iter = 547  
nu = 0.009802  
obj = -125.464543, rho = 0.282825  
nSV = 148, nBSV = 0  
Total nSV = 148  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 81.5% (163/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 81% (162/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 77.5% (155/200) (classification)

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optimization finished, #iter = 444  
nu = 0.006476  
obj = -82.893372, rho = 0.373676  
nSV = 175, nBSV = 0  
Total nSV = 175

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optimization finished, #iter = 462  
nu = 0.008459  
obj = -108.284276, rho = 0.364580  
nSV = 172, nBSV = 0  
Total nSV = 172

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optimization finished, #iter = 454  
nu = 0.008004  
obj = -102.450971, rho = 0.274335  
nSV = 173, nBSV = 0  
Total nSV = 173

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optimization finished, #iter = 484  
nu = 0.006943  
obj = -88.870972, rho = 0.430620  
nSV = 169, nBSV = 0  
Total nSV = 169

.\*. \*

optimization finished, #iter = 455  
nu = 0.006918  
obj = -88.555952, rho = 0.328984  
nSV = 177, nBSV = 0  
Total nSV = 177

Accuracy = 76.5% (153/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 76% (152/200) (classification)

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optimization finished, #iter = 411

nu = 0.005961

obj = -76.303949, rho = 0.371490

nSV = 193, nBSV = 0

Total nSV = 193

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optimization finished, #iter = 426

nu = 0.006745

obj = -86.333932, rho = 0.364099

nSV = 192, nBSV = 0

Total nSV = 192

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optimization finished, #iter = 430

nu = 0.006957

obj = -89.044535, rho = 0.288381

nSV = 188, nBSV = 0

Total nSV = 188

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optimization finished, #iter = 400

nu = 0.006113

obj = -78.241750, rho = 0.422762

nSV = 191, nBSV = 0

Total nSV = 191

.\*. \*

optimization finished, #iter = 429

nu = 0.006318

obj = -80.869176, rho = 0.337580

nSV = 192, nBSV = 0

Total nSV = 192

Accuracy = 74% (148/200) (classification)

Accuracy = 75% (150/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 75% (150/200) (classification)

Accuracy = 72.5% (145/200) (classification)

Accuracy = 77% (154/200) (classification)

Accuracy = 76% (152/200) (classification)

Accuracy = 70.5% (141/200) (classification)

Accuracy = 71% (142/200) (classification)

Accuracy = 73% (146/200) (classification)

Accuracy = 69% (138/200) (classification)

Accuracy = 73.5% (147/200) (classification)

Accuracy = 74% (148/200) (classification)

Accuracy = 75.5% (151/200) (classification)



Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 68.5% (137/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 70% (140/200) (classification)  
.\*  
optimization finished, #iter = 396  
nu = 0.006083  
obj = -77.859532, rho = 0.383729  
nSV = 199, nBSV = 0  
Total nSV = 199  
.\*.\*  
optimization finished, #iter = 403  
nu = 0.006439  
obj = -82.418921, rho = 0.377600  
nSV = 200, nBSV = 0  
Total nSV = 200  
.\*.\*  
optimization finished, #iter = 419  
nu = 0.006906  
obj = -88.391509, rho = 0.290267  
nSV = 199, nBSV = 0  
Total nSV = 199  
.\*.\*  
optimization finished, #iter = 463  
nu = 0.006083  
obj = -77.868605, rho = 0.423678  
nSV = 198, nBSV = 0  
Total nSV = 198  
.\*.\*  
optimization finished, #iter = 441  
nu = 0.006548  
obj = -83.812354, rho = 0.315646  
nSV = 200, nBSV = 0  
Total nSV = 200  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)

Accuracy = 65% (130/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 68.5% (137/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 74.5% (149/200) (classification)  
Accuracy = 73.5% (147/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 66% (132/200) (classification)  
Accuracy = 69.5% (139/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 67% (134/200) (classification)

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WARNING: using -h 0 may be faster

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optimization finished, #iter = 529

nu = 0.393221

obj = -14890.489329, rho = -12.763587

nSV = 83, nBSV = 72

Total nSV = 83

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optimization finished, #iter = 965

nu = 0.384413

obj = -14452.313934, rho = -0.644544

nSV = 83, nBSV = 70

Total nSV = 83

...\*.\*

optimization finished, #iter = 975

nu = 0.365851

obj = -13629.223696, rho = -2.780210

nSV = 79, nBSV = 66

Total nSV = 79

...\*.\*

optimization finished, #iter = 1033

nu = 0.361542

obj = -13340.834658, rho = 1.061480

nSV = 80, nBSV = 68

Total nSV = 80

..\*.\*

optimization finished, #iter = 668

nu = 0.385253

obj = -14608.612097, rho = -5.681492

nSV = 81, nBSV = 71

Total nSV = 81

Accuracy = 93.5% (187/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 95% (190/200) (classification)  
Accuracy = 94% (188/200) (classification)  
Accuracy = 95% (190/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 96% (192/200) (classification)  
Accuracy = 98% (196/200) (classification)  
Accuracy = 95.5% (191/200) (classification)  
Accuracy = 94.5% (189/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 93.5% (187/200) (classification)  
Accuracy = 92% (184/200) (classification)

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optimization finished, #iter = 1124  
nu = 0.300135  
obj = -11457.593952, rho = -9.995767  
nSV = 69, nBSV = 52  
Total nSV = 69

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optimization finished, #iter = 994  
nu = 0.296350  
obj = -11430.022187, rho = -1.509291  
nSV = 67, nBSV = 53  
Total nSV = 67

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optimization finished, #iter = 2270  
nu = 0.281957  
obj = -10473.582930, rho = -0.527188  
nSV = 67, nBSV = 47  
Total nSV = 67

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optimization finished, #iter = 1376  
nu = 0.287617  
obj = -9727.080471, rho = 3.821444  
nSV = 66, nBSV = 50  
Total nSV = 66

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optimization finished, #iter = 701

nu = 0.297803

obj = -11399.407892, rho = -5.582383

nSV = 66, nBSV = 54

Total nSV = 66

Accuracy = 94.5% (189/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 92.5% (185/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 93% (186/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 93% (186/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 96% (192/200) (classification)

Accuracy = 98.5% (197/200) (classification)

Accuracy = 95% (190/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 95% (190/200) (classification)

Accuracy = 94% (188/200) (classification)

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optimization finished, #iter = 1255

nu = 0.230195

obj = -8546.346714, rho = -9.279138

nSV = 57, nBSV = 36

Total nSV = 57

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optimization finished, #iter = 2099

nu = 0.233474

obj = -9076.125452, rho = -1.127170

nSV = 57, nBSV = 36

Total nSV = 57

..... \* .. \*

optimization finished, #iter = 1704

nu = 0.212384

obj = -8130.613746, rho = 0.442675

nSV = 57, nBSV = 35

Total nSV = 57

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optimization finished, #iter = 2026

nu = 0.199790

obj = -6836.011638, rho = 0.429020

nSV = 50, nBSV = 30

Total nSV = 50

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optimization finished, #iter = 2799

nu = 0.235956

obj = -8644.569377, rho = -4.411822

nSV = 57, nBSV = 36

Total nSV = 57

Accuracy = 94% (188/200) (classification)

Accuracy = 92.5% (185/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 92.5% (185/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 93% (186/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 95% (190/200) (classification)

Accuracy = 99% (198/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 91.5% (183/200) (classification)

Accuracy = 92.5% (185/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 93.5% (187/200) (classification)

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optimization finished, #iter = 2029

nu = 0.164434

obj = -5925.265140, rho = -9.025351

nSV = 51, nBSV = 22

Total nSV = 51

.....\*.....\*

optimization finished, #iter = 2477

nu = 0.180227

obj = -7350.223262, rho = 0.402449

nSV = 55, nBSV = 27

Total nSV = 55

.....\*.....\*

optimization finished, #iter = 2873

nu = 0.168718

obj = -6237.303040, rho = 0.637791

nSV = 48, nBSV = 20

Total nSV = 48

.....\*.....\*

optimization finished, #iter = 1389

nu = 0.144149

obj = -4750.511816, rho = 0.369732

nSV = 41, nBSV = 16

Total nSV = 41

.....\*.....\*

optimization finished, #iter = 2842

nu = 0.170045

obj = -6239.236685, rho = -3.338970

nSV = 52, nBSV = 22

Total nSV = 52

Accuracy = 94% (188/200) (classification)

Accuracy = 93% (186/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 90.5% (181/200) (classification)

Accuracy = 91% (182/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 95.5% (191/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 92% (184/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 94.5% (189/200) (classification)

Accuracy = 97% (194/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 93% (186/200) (classification)

Accuracy = 90% (180/200) (classification)

Accuracy = 94% (188/200) (classification)

Accuracy = 93.5% (187/200) (classification)

Accuracy = 91.5% (183/200) (classification)

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optimization finished, #iter = 2417

nu = 0.117516

obj = -3761.296859, rho = -6.059215

nSV = 46, nBSV = 9

Total nSV = 46

..... \* ..... \*

optimization finished, #iter = 2412  
nu = 0.146159  
obj = -5829.085517, rho = 0.970475  
nSV = 54, nBSV = 16  
Total nSV = 54

..... \* .. \*

optimization finished, #iter = 1543  
nu = 0.128960  
obj = -4433.261447, rho = 0.357140  
nSV = 49, nBSV = 14  
Total nSV = 49

..... \* .. \*

optimization finished, #iter = 1809  
nu = 0.098402  
obj = -3218.077086, rho = -0.058408  
nSV = 43, nBSV = 9  
Total nSV = 43

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optimization finished, #iter = 2278  
nu = 0.120574  
obj = -4415.366124, rho = -2.927557  
nSV = 53, nBSV = 14  
Total nSV = 53

Accuracy = 92.5% (185/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 91% (182/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 93% (186/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 92.5% (185/200) (classification)  
Accuracy = 90.5% (181/200) (classification)

.....\*...\*

optimization finished, #iter = 1835  
nu = 0.071163  
obj = -2052.769832, rho = -2.986224  
nSV = 53, nBSV = 4  
Total nSV = 53

.....\*...\*

optimization finished, #iter = 2064  
nu = 0.108750  
obj = -4141.245795, rho = 0.073359  
nSV = 59, nBSV = 9  
Total nSV = 59

.....\*...\*

optimization finished, #iter = 1774  
nu = 0.086194  
obj = -2372.273952, rho = 0.790049  
nSV = 49, nBSV = 5  
Total nSV = 49

.....\*...\*

optimization finished, #iter = 1767  
nu = 0.067494  
obj = -2037.102121, rho = -0.623810  
nSV = 49, nBSV = 4  
Total nSV = 49

.....\*...\*

optimization finished, #iter = 2186  
nu = 0.085927  
obj = -2589.953096, rho = -2.388378  
nSV = 57, nBSV = 3  
Total nSV = 57

Accuracy = 88.5% (177/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 92% (184/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 88.5% (177/200) (classification)



Accuracy = 90.5% (181/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 87.5% (175/200) (classification)  
Accuracy = 89.5% (179/200) (classification)  
.....\*...\*  
optimization finished, #iter = 1657  
nu = 0.036698  
obj = -939.525642, rho = -0.701558  
nSV = 64, nBSV = 0  
Total nSV = 64  
.....\*...\*  
optimization finished, #iter = 1472  
nu = 0.073742  
obj = -2486.191434, rho = 0.220025  
nSV = 67, nBSV = 4  
Total nSV = 67  
....\*...\*  
optimization finished, #iter = 1505  
nu = 0.037111  
obj = -950.105405, rho = 0.417739  
nSV = 63, nBSV = 0  
Total nSV = 63  
...\*...\*  
optimization finished, #iter = 1169  
nu = 0.036010  
obj = -1029.141641, rho = -0.133976  
nSV = 60, nBSV = 1  
Total nSV = 60  
.....\*...\*  
optimization finished, #iter = 1436  
nu = 0.045091  
obj = -1253.343056, rho = -1.019321  
nSV = 68, nBSV = 1  
Total nSV = 68  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 90% (180/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 90.5% (181/200) (classification)  
Accuracy = 86.5% (173/200) (classification)

Accuracy = 87% (174/200) (classification)  
Accuracy = 89% (178/200) (classification)  
Accuracy = 88% (176/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 82.5% (165/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 88.5% (177/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 86% (172/200) (classification)

..\*..\*

optimization finished, #iter = 988

nu = 0.015955

obj = -408.476663, rho = 0.103403

nSV = 84, nBSV = 0

Total nSV = 84

.....\*...\*

optimization finished, #iter = 1624

nu = 0.038703

obj = -1294.429715, rho = 0.761433

nSV = 86, nBSV = 2

Total nSV = 86

...\*.\*

optimization finished, #iter = 941

nu = 0.017846

obj = -456.912489, rho = 0.141244

nSV = 78, nBSV = 0

Total nSV = 78

...\*.\*

optimization finished, #iter = 881

nu = 0.018587

obj = -475.873510, rho = 0.115025

nSV = 75, nBSV = 0

Total nSV = 75

...\*...\*

optimization finished, #iter = 1205

nu = 0.019452

obj = -497.960762, rho = -0.234410

nSV = 90, nBSV = 0

Total nSV = 90

Accuracy = 81.5% (163/200) (classification)

Accuracy = 86.5% (173/200) (classification)

Accuracy = 86.5% (173/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 87% (174/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 82.5% (165/200) (classification)

..\*.\*

optimization finished, #iter = 816

nu = 0.007587

obj = -194.238282, rho = 0.233211

nSV = 115, nBSV = 0

Total nSV = 115

..\*.\*

optimization finished, #iter = 800

nu = 0.021744

obj = -593.450645, rho = 0.754512

nSV = 108, nBSV = 1

Total nSV = 108

..\*.\*

optimization finished, #iter = 674

nu = 0.009703

obj = -248.395888, rho = 0.119683

nSV = 101, nBSV = 0

Total nSV = 101

..\*.\*

optimization finished, #iter = 616

nu = 0.008586

obj = -219.813869, rho = 0.389660

nSV = 105, nBSV = 0

Total nSV = 105

..\*.\*

optimization finished, #iter = 743

nu = 0.008756  
obj = -224.175020, rho = 0.198869  
nSV = 118, nBSV = 0  
Total nSV = 118  
Accuracy = 81.5% (163/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 86% (172/200) (classification)  
Accuracy = 84.5% (169/200) (classification)  
Accuracy = 83% (166/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 81% (162/200) (classification)  
Accuracy = 85.5% (171/200) (classification)  
Accuracy = 81% (162/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 82% (164/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 85% (170/200) (classification)  
Accuracy = 82.5% (165/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 81.5% (163/200) (classification)  
Accuracy = 82% (164/200) (classification)

. \*. \*

optimization finished, #iter = 543  
nu = 0.004359  
obj = -111.591291, rho = 0.329300  
nSV = 149, nBSV = 0  
Total nSV = 149

.. \*. \*

optimization finished, #iter = 640  
nu = 0.007785  
obj = -199.311152, rho = 0.427190  
nSV = 141, nBSV = 0  
Total nSV = 141

. \*. \*

optimization finished, #iter = 595  
nu = 0.005748  
obj = -147.163505, rho = 0.212470  
nSV = 136, nBSV = 0  
Total nSV = 136

. \*. \*

optimization finished, #iter = 502

nu = 0.004927  
obj = -126.146828, rho = 0.431504  
nSV = 139, nBSV = 0  
Total nSV = 139  
.\*.\*  
optimization finished, #iter = 547  
nu = 0.004901  
obj = -125.464543, rho = 0.282825  
nSV = 148, nBSV = 0  
Total nSV = 148  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 81.5% (163/200) (classification)  
Accuracy = 84% (168/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 81% (162/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 80.5% (161/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 86.5% (173/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
.\*.\*  
optimization finished, #iter = 444  
nu = 0.003238  
obj = -82.893372, rho = 0.373676  
nSV = 175, nBSV = 0  
Total nSV = 175  
.\*.\*  
optimization finished, #iter = 462  
nu = 0.004230  
obj = -108.284276, rho = 0.364580  
nSV = 172, nBSV = 0  
Total nSV = 172  
.\*.\*  
optimization finished, #iter = 454

nu = 0.004002  
obj = -102.450971, rho = 0.274335  
nSV = 173, nBSV = 0  
Total nSV = 173  
.\*.\*  
optimization finished, #iter = 484  
nu = 0.003471  
obj = -88.870972, rho = 0.430620  
nSV = 169, nBSV = 0  
Total nSV = 169  
.\*.\*  
optimization finished, #iter = 455  
nu = 0.003459  
obj = -88.555952, rho = 0.328984  
nSV = 177, nBSV = 0  
Total nSV = 177  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 79.5% (159/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 78% (156/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 80% (160/200) (classification)  
Accuracy = 79% (158/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 78.5% (157/200) (classification)  
Accuracy = 76% (152/200) (classification)  
.\*.\*  
optimization finished, #iter = 411  
nu = 0.002981  
obj = -76.303949, rho = 0.371490  
nSV = 193, nBSV = 0  
Total nSV = 193  
.\*.\*  
optimization finished, #iter = 426

nu = 0.003372  
obj = -86.333932, rho = 0.364099  
nSV = 192, nBSV = 0  
Total nSV = 192  
.\*.\*  
optimization finished, #iter = 430  
nu = 0.003478  
obj = -89.044535, rho = 0.288381  
nSV = 188, nBSV = 0  
Total nSV = 188  
.\*.\*  
optimization finished, #iter = 400  
nu = 0.003056  
obj = -78.241750, rho = 0.422762  
nSV = 191, nBSV = 0  
Total nSV = 191  
.\*.\*  
optimization finished, #iter = 429  
nu = 0.003159  
obj = -80.869176, rho = 0.337580  
nSV = 192, nBSV = 0  
Total nSV = 192  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75% (150/200) (classification)  
Accuracy = 72.5% (145/200) (classification)  
Accuracy = 77% (154/200) (classification)  
Accuracy = 76% (152/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 69% (138/200) (classification)  
Accuracy = 73.5% (147/200) (classification)  
Accuracy = 74% (148/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 77.5% (155/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 68.5% (137/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 76.5% (153/200) (classification)  
Accuracy = 70% (140/200) (classification)  
.\*  
optimization finished, #iter = 396

nu = 0.003041  
obj = -77.859532, rho = 0.383729  
nSV = 199, nBSV = 0  
Total nSV = 199  
.\*.\*  
optimization finished, #iter = 403  
nu = 0.003220  
obj = -82.418921, rho = 0.377600  
nSV = 200, nBSV = 0  
Total nSV = 200  
.\*.\*  
optimization finished, #iter = 419  
nu = 0.003453  
obj = -88.391509, rho = 0.290267  
nSV = 199, nBSV = 0  
Total nSV = 199  
.\*.\*  
optimization finished, #iter = 463  
nu = 0.003042  
obj = -77.868605, rho = 0.423678  
nSV = 198, nBSV = 0  
Total nSV = 198  
.\*.\*  
optimization finished, #iter = 441  
nu = 0.003274  
obj = -83.812354, rho = 0.315646  
nSV = 200, nBSV = 0  
Total nSV = 200  
Accuracy = 72% (144/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 72% (144/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 75.5% (151/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 71% (142/200) (classification)  
Accuracy = 65% (130/200) (classification)  
Accuracy = 70% (140/200) (classification)  
Accuracy = 65.5% (131/200) (classification)  
Accuracy = 68.5% (137/200) (classification)  
Accuracy = 73% (146/200) (classification)  
Accuracy = 74.5% (149/200) (classification)  
Accuracy = 73.5% (147/200) (classification)  
Accuracy = 72.5% (145/200) (classification)



Accuracy = 66% (132/200) (classification)  
Accuracy = 69.5% (139/200) (classification)  
Accuracy = 70.5% (141/200) (classification)  
Accuracy = 67% (134/200) (classification)

Best accuracy:

94

Best alpha value:

0.1250

Best C value:

256

Accuracy matrix:

68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.7000
68.7000	68.7000	68.7000							
68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.7000
68.7000	68.7000	68.7000							
68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.7000	68.9250	69.0000
68.9250	68.7000	68.7000							
68.7000	68.7000	68.7000	68.7000	68.6500	68.5750	68.6250	69.5500	70.0000	70.0750
69.8250	68.9750	68.7750							
68.7000	68.7000	68.7000	68.5750	68.5250	68.8250	71.1750	72.9250	76.0500	75.4250
73.7250	71.5500	69.6000							
68.7000	68.7000	68.5750	68.6500	69.8750	75.4000	80.2000	82.4000	80.8000	78.3500
75.7750	73.3250	70.6000							
68.7000	68.6250	68.7500	71.6750	80.8000	87.5750	87.2000	85.2500	82.6000	78.8250
76.2250	73.4250	70.6250							
68.7500	68.7750	72.5750	84.3250	90.2750	90.5000	89.1000	86.6000	82.9000	79.3250
76.3750	73.4500	70.6250							
68.8500	73.3000	86.3500	91.9000	91.9250	91.2500	89.7500	86.3750	83.1000	79.5500
76.2500	73.4500	70.6250							
73.7250	87.2750	92.7750	92.9750	92.4000	91.7250	89.1250	85.4000	82.7750	79.5750
76.2500	73.4500	70.6250							
87.7750	92.9750	93.4750	93.1000	92.6500	91.1500	87.6500	84.9250	82.6500	79.3500
76.2500	73.4500	70.6250							
93.5000	93.7500	93.6250	93.5000	92.5250	90.2500	86.7750	84.6750	82.5000	79.3750
76.2500	73.4500	70.6250							
93.9000	94.0000	93.7000	93.1000	91.1500	88.8750	86.5500	84.5000	82.5000	79.3750
76.2500	73.4500	70.6250							

....\*..\*

optimization finished, #iter = 6440

nu = 0.177141

```
obj = -79883.628864, rho = -15.079098  
nSV = 367, nBSV = 343  
Total nSV = 367  
Accuracy = 94.6054% (947/1001) (classification)  
>>
```

**Notes:**

The best value obtained for alpha was 0.125 while the best C value was found to be 256. At these values, a classification accuracy of 94.6054% was obtained when using the training set SVM to classify the test set.