

**Data 5000:**

**python Assign6.py energydata\_complete.csv hinge 0.1 0.0001 100 linear 40**

loss is ----- hinge

c is ----- 0.1

eps is ----- 0.0001

maxiter is ----- 100

kernel is ----- linear

spread is ----- 40

**Training**

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The final accuracy : 0.7117142857142857

The weight vector is: [-2.70339247 -0.29233717 0.04382226 -0.30766585 0.39201655 -  
0.22529489

0.11087436 -0.31003404 0.3338184 -0.20234844 -0.93128806 0.06062323

1.0172881 -0.17384031 0.53566366 -0.33472942 0.89743085 -0.14669221

0.71345857 0.13670931 1.30211253 0.35950123 0.02289492 -0.7790077

0.20380276 -0.13770192]

The bias vector is: [-1100.8857289563293, -1006.5415275129227, -1140.534172035978, -  
1109.4434376263546, -1102.9672484595112, -1141.4296210978598,..., -1151.7678156882841,  
-1149.7554232839525, -1118.6666767975482, -1071.5372791622442, -1175.3938033726301, -  
1042.5683564413857]

The bias avergae is: -1100.029363519769

The number of SVM for hinge is 3423

## Testing

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The final accuracy : 0.7016544362908606

The weight vector is: [-8.97224926e-03 -1.14301054e-03 -2.38985207e-04 -1.25902830e-03

1.08439367e-03 -9.39409065e-04 3.28935394e-04 -9.56908952e-04

8.01348681e-04 -8.69220660e-04 -2.02482257e-04 -6.97382838e-04

1.26910739e-03 -5.86285774e-04 1.54870003e-03 -1.50893794e-03

2.41134585e-03 -6.08841734e-04 2.06018171e-03 -4.14400193e-04

7.46963607e-03 -8.66193408e-05 9.25405123e-05 -1.68569812e-03

-4.66296550e-04 1.48619653e-04]

The bias vector is: [-4.929498860167622, -6.62395385579134, -6.925290356771974, -  
6.696983233926156, -6.624527370909645, -6.774508516594885, -6.7708697766126305, -  
6.720228074073467, -6.869147427937935, -4.96716616613828, -6.872911820634716, -  
6.859650984980719, -6.8572572781198815, -4.881098264801517, -6.5332600677170305,..., , -  
6.672679379155874, -4.909469506259622, -4.9438722965602855]

The bias avergae is: -5.848053017772015

The number of SVM for hinge is1024

**python Assign6.py energydata\_complete.csv quadratic 0.1 0.001 100 linear 40**

loss is ----- quadratic

c is ----- 0.1

eps is ----- 0.001

maxiter is ----- 100

kernel is ----- linear

spread is ----- 40

**Training**

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The final accuracy : 0.7111428571428571

The weight vector is: [-0.02380609 -0.00197035 -0.00078302 -0.002132 0.00170205 -  
0.00150151

0.00038851 -0.00195688 0.00136568 -0.00153664 -0.00563653 -0.00195279

0.00366874 -0.00108238 0.0025154 -0.00256516 0.00513009 -0.00091886

0.00467375 -0.00118642 0.01412581 0.00100499 -0.00032262 -0.00566021

-0.00106657 -0.00024456]

The bias vector is: [-11.823600859932982, -11.058200705497722, -9.555856385546722, -  
9.995259778110128, -10.075113188213896, -11.758875043778941, -10.299231709121909, -  
9.915835332884916, -11.567578741236236, -11.214288911145427, -11.906463571461918, -  
11.706970477816217, -12.00754978079094, -11.710561503666923, -11.705263009082401, ..., -  
9.88247577770318, -10.02703695085504, -9.980526743286301, -10.15276142628956, -  
9.959236132415253, -9.638136498850322]

The bias avergae is: -10.805832378202727

The number of SVM for quatradic is 2664

## Testing

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The final accuracy : 0.7250166777851901

The weight vector is: [-1.15220749e-02 -1.18275243e-03 -2.66518006e-05 -1.21194956e-03

1.08363253e-03 -9.90221478e-04 2.10861713e-04 -9.94218620e-04

7.33802839e-04 -8.37040351e-04 1.35296429e-04 -4.80201930e-04

8.63979657e-04 -6.81189060e-04 1.31346415e-03 -1.47439884e-03

2.33225986e-03 -5.65669735e-04 1.96259681e-03 -1.19579192e-04

2.34539185e-03 -1.09099059e-03 2.51662303e-04 -2.65244801e-03

-2.46490978e-04 7.57820473e-04]

The bias vector is: [-2.834856026720552, -2.7488857269398683, -2.6279387532775513, -

2.6918181588517385, -2.6422283383408063, -2.7551930880377102, -

0.8984334211526641,..., , -0.7994342427348222, -0.7620522535078376, -2.879253627289458,  
-2.7300117226815908]

The bias average is: -1.833840322634225

The number of SVM for quadratic is 1152

**python Assign6.py energydata\_complete.csv quadratic 1 0.001 100 gaussian 40**

loss is ----- quadratic

c is ----- 1.0

eps is ----- 0.001

maxiter is ----- 100

kernel is ----- gaussian

spread is ----- 40

### Training

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The final accuracy : 0.9722857142857143

The number of SVM for quadratic is 3368

### Testing

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The final accuracy : 0.9913275517011341

The number of SVM for quadratic is 1470

**Python Assign6.py energydata\_complete.csv hinge 1 0.001 100 gaussian 40**

loss is ----- hinge

c is ----- 1.0

eps is ----- 0.001

maxiter is ----- 100

kernel is ----- gaussian

spread is ----- 40

**Training**

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The final accuracy : 0.868

The number of SVM for hinge is 1290

**Testing**

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The final accuracy : 0.9199466310873916

The number of SVM for hinge is 618

