| dataset | error | execution_time | method | n_tries | search_space |
| --- | --- | --- | --- | --- | --- |
| 10_features_0.01_error.csv | 941,4554469 | 2,477500916 | bipop | 30 | 0,01 |
| 10_features_0.01_error.csv | 941,9343337 | 2,11599803 | bipop | 30 | 0,1 |
| 10_features_0.01_error.csv | 940,5098485 | 1,664901257 | ipop | 30 | 0,01 |
| 10_features_0.01_error.csv | 952,8398896 | 0,653532028 | ipop | 30 | 0,1 |
| 10_features_0.1_error.csv | 946,4580805 | 2,613025904 | bipop | 30 | 0,01 |
| 10_features_0.1_error.csv | 947,4210923 | 2,222440958 | bipop | 30 | 0,1 |
| 10_features_0.1_error.csv | 943,0160154 | 0,484524965 | ipop | 30 | 0,01 |
| 10_features_0.1_error.csv | 1127,215434 | 0,644745827 | ipop | 30 | 0,1 |
| 10_features_0.5_error.csv | 937,4526038 | 2,616722822 | bipop | 30 | 0,01 |
| 10_features_0.5_error.csv | 942,512091 | 2,666468143 | bipop | 30 | 0,1 |
| 10_features_0.5_error.csv | 929,3049692 | 0,721336126 | ipop | 30 | 0,01 |
| 10_features_0.5_error.csv | 984,7835189 | 0,528648138 | ipop | 30 | 0,1 |
| 100_features_0.01_error.csv | 35141,00682 | 194,55405 | bipop | 30 | 0,01 |
| 100_features_0.01_error.csv | 35308,98149 | 156,4107442 | bipop | 30 | 0,1 |
| 100_features_0.01_error.csv | 35138,04389 | 8,723278284 | ipop | 30 | 0,01 |
| 100_features_0.01_error.csv | 35517,17656 | 6,798106909 | ipop | 30 | 0,1 |
| 100_features_0.1_error.csv | 35138,66816 | 202,307493 | bipop | 30 | 0,01 |
| 100_features_0.1_error.csv | 35409,29524 | 178,5653768 | bipop | 30 | 0,1 |
| 100_features_0.1_error.csv | 35132,99619 | 6,300856829 | ipop | 30 | 0,01 |
| 100_features_0.1_error.csv | 35430,75777 | 7,977588415 | ipop | 30 | 0,1 |
| 100_features_0.5_error.csv | 35132,74258 | 192,0144408 | bipop | 30 | 0,01 |
| 100_features_0.5_error.csv | 35340,96065 | 182,8132451 | bipop | 30 | 0,1 |
| 100_features_0.5_error.csv | 35133,83138 | 8,56647706 | ipop | 30 | 0,01 |
| 100_features_0.5_error.csv | 47385,49799 | 6,88515687 | ipop | 30 | 0,1 |
| 2_features_0.01_error.csv | 539,1815047 | 0,56893301 | bipop | 30 | 0,01 |
| 2_features_0.01_error.csv | 539,0568511 | 0,470484018 | bipop | 30 | 0,1 |
| 2_features_0.01_error.csv | 540,8329572 | 0,549858093 | ipop | 30 | 0,01 |
| 2_features_0.01_error.csv | 481,7394656 | 0,410796165 | ipop | 30 | 0,1 |
| 2_features_0.1_error.csv | 537,1762728 | 0,604638815 | bipop | 30 | 0,01 |
| 2_features_0.1_error.csv | 536,4102112 | 0,477073193 | bipop | 30 | 0,1 |
| 2_features_0.1_error.csv | 531,6423949 | 0,555171728 | ipop | 30 | 0,01 |
| 2_features_0.1_error.csv | 554,5731898 | 0,4192729 | ipop | 30 | 0,1 |
| 2_features_0.5_error.csv | 542,1816633 | 0,687167168 | bipop | 30 | 0,01 |
| 2_features_0.5_error.csv | 542,1691989 | 0,428637981 | bipop | 30 | 0,1 |
| 2_features_0.5_error.csv | 542,4550604 | 0,568226099 | ipop | 30 | 0,01 |
| 2_features_0.5_error.csv | 513,5643663 | 0,404718876 | ipop | 30 | 0,1 |
| 5_features_0.01_error.csv | 632,129647 | 1,614836931 | bipop | 30 | 0,01 |
| 5_features_0.01_error.csv | 633,2501094 | 1,395900965 | bipop | 30 | 0,1 |
| 5_features_0.01_error.csv | 632,1432771 | 0,648628235 | ipop | 30 | 0,01 |
| 5_features_0.01_error.csv | 1687,557423 | 0,453794956 | ipop | 30 | 0,1 |
| 5_features_0.1_error.csv | 624,1412702 | 1,550135851 | bipop | 30 | 0,01 |
| 5_features_0.1_error.csv | 625,674944 | 1,69889307 | bipop | 30 | 0,1 |
| 5_features_0.1_error.csv | 624,1360365 | 0,647916079 | ipop | 30 | 0,01 |
| 5_features_0.1_error.csv | 1497,464246 | 0,465873957 | ipop | 30 | 0,1 |
| 5_features_0.5_error.csv | 594,1425228 | 2,190318108 | bipop | 30 | 0,01 |
| 5_features_0.5_error.csv | 593,8218835 | 1,460239172 | bipop | 30 | 0,1 |
| 5_features_0.5_error.csv | 594,1171274 | 0,737484217 | ipop | 30 | 0,01 |
| 5_features_0.5_error.csv | 595,5357366 | 0,477359056 | ipop | 30 | 0,1 |
| compas_metadata.csv | 31835,6632 | 13,85400677 | bipop | 30 | 0,01 |
| compas_metadata.csv | 31633,36097 | 11,41897917 | bipop | 30 | 0,1 |
| compas_metadata.csv | 31583,07943 | 18,99957681 | ipop | 30 | 0,01 |

| compas_metadata.csv | 1308223,91 | 16,50090027 | ipop | 30 | 0,1 |
|---|---|---|---|---|---|
| credit-g_metadata.csv | 11706,07366 | 2,746187925 | bipop | 30 | 0,01 |
| credit-g_metadata.csv | 11704,60449 | 2,123418093 | bipop | 30 | 0,1 |
| credit-g_metadata.csv | 11563,42042 | 0,833117962 | ipop | 30 | 0,01 |
| credit-g_metadata.csv | 14598,46527 | 0,607759714 | ipop | 30 | 0,1 |
| XOR_metadata.csv | 5244,146333 | 2,81317091 | bipop | 30 | 0,01 |
| XOR_metadata.csv | 5302,804652 | 2,285028934 | bipop | 30 | 0,1 |
| XOR_metadata.csv | 5243,616068 | 0,941138029 | ipop | 30 | 0,01 |
| XOR_metadata.csv | 22222,82896 | 0,728056669 | ipop | 30 | 0,1 |

Changed value of parameter NonConvex to 2
  Prev: -1  Min: -1  Max: 2  Default: -1
Gurobi Optimizer version 9.1.2 build v9.1.2rc0 (mac64)
Thread count: 2 physical cores, 4 logical processors, using up to 4 threads
Optimize a model with 0 rows, 3 columns and 0 nonzeros
Model fingerprint: 0x07f362a7
Model has 2 quadratic objective terms
Coefficient statistics:
  Matrix range    [0e+00, 0e+00]
  Objective range  [0e+00, 0e+00]
  QObjective range [2e+00, 2e+00]
  Bounds range    [0e+00, 0e+00]
  RHS range      [0e+00, 0e+00]

Continuous model is non-convex -- solving as a MIP.

Found heuristic solution: objective 1.6006911
Found heuristic solution: objective -6.53809e+18
Presolve time: 0.00s
Presolved: 5 rows, 7 columns, 11 nonzeros
Presolved model has 2 bilinear constraint(s)
Variable types: 7 continuous, 0 integer (0 binary)

Root relaxation: unbounded, 3 iterations, 0.00 seconds

| Nodes | | Current Node | | | Objective Bounds | | | Work | |
|---|---|---|---|---|---|---|---|---|---|
| Expl | Unexpl | Obj | Depth | IntInf | Incumbent | BestBd | Gap | It/Node | Time |
| 0 | 0 | postponed | 0 | | -6.538e+18 | - | - | - | 0s |
| 0 | 0 | postponed | 0 | | -6.538e+18 | - | - | - | 0s |
| 0 | 2 | postponed | 0 | | -6.538e+18 | - | - | - | 0s |
| *37043 | 35308 | | 115 | | -9.85922e+18 | - | - | 0.1 | 1s |
| *37045 | 35308 | | 116 | | -1.97184e+19 | - | - | 0.1 | 1s |
| *37047 | 35308 | | 117 | | -3.94369e+19 | - | - | 0.1 | 1s |
| *37049 | 35308 | | 118 | | -7.88737e+19 | - | - | 0.1 | 1s |
| *37051 | 35308 | | 119 | | -1.57747e+20 | - | - | 0.1 | 1s |
| *37053 | 35308 | | 120 | | -3.15495e+20 | - | - | 0.1 | 1s |
| *37055 | 35308 | | 121 | | -6.30990e+20 | - | - | 0.1 | 1s |
| *37057 | 35308 | | 122 | | -1.26198e+21 | - | - | 0.1 | 1s |
| *37059 | 35308 | | 123 | | -2.52396e+21 | - | - | 0.1 | 1s |
| *37061 | 35308 | | 124 | | -5.04792e+21 | - | - | 0.1 | 1s |

```
*37063 35308        125   -1.00958e+22      -    -  0.1   1s
*37065 35308        126   -2.01917e+22      -    -  0.1   1s
*37067 35308        127   -4.03833e+22      -    -  0.1   1s
*37069 35308        128   -8.07667e+22      -    -  0.1   1s
*37071 35308        129   -1.61533e+23      -    -  0.1   1s
*37073 35308        130   -3.23067e+23      -    -  0.1   1s
*37075 35308        131   -6.46134e+23      -    -  0.1   1s
*37077 35308        132   -1.29227e+24      -    -  0.1   1s
*37079 35308        133   -2.58453e+24      -    -  0.1   1s
*37081 35308        134   -5.16907e+24      -    -  0.1   1s
*37083 35308        135   -1.03381e+25      -    -  0.1   1s
*37085 35308        136   -2.06763e+25      -    -  0.1   1s
*37947 35308        136   -2.06763e+25      -    -  0.1   1s
*51236 46107        139   -5.75097e+25      -    -  0.1   1s
*51238 46107        140   -1.15019e+26      -    -  0.1   1s
*51242 46107        143   -1.43774e+26      -    -  0.1   1s
```

Explored 54152 nodes (8823 simplex iterations) in 1.95 seconds
Thread count was 4 (of 4 available processors)

Solution count 10: -1.43774e+26 -1.15019e+26 -5.75097e+25 ... -6.46134e+23

Model is unbounded
Best objective -1.437741852709e+26, best bound -, gap -
Ar 2e+06
Br 8.79609e+19
cr 999976
Obj: -1.43774e+26