

3-fold cross validation:

```
Iteration 1, loss = inf
Validation score: 0.791500
Iteration 2, loss = inf
Validation score: 0.791000
Iteration 3, loss = inf
Validation score: 0.374500
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.772959
Iteration 2, loss = inf
Validation score: 0.739286
Iteration 3, loss = inf
Validation score: 0.788265
Iteration 4, loss = inf
Validation score: 0.746939
Iteration 5, loss = inf
Validation score: 0.773980
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.743367
Iteration 2, loss = inf
Validation score: 0.732143
Iteration 3, loss = inf
Validation score: 0.789796
Iteration 4, loss = inf
Validation score: 0.803571
Iteration 5, loss = inf
Validation score: 0.370408
Iteration 6, loss = inf
Validation score: 0.747959
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.365306
Iteration 2, loss = inf
Validation score: 0.767347
Iteration 3, loss = inf
Validation score: 0.781122
Iteration 4, loss = inf
Validation score: 0.788776
Iteration 5, loss = inf
Validation score: 0.380102
Iteration 6, loss = inf
Validation score: 0.787755
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.756633
Iteration 2, loss = inf
Validation score: 0.774490
Iteration 3, loss = inf
Validation score: 0.350510
Iteration 4, loss = inf
```

Validation score: 0.713776
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.752041
Iteration 2, loss = inf
Validation score: 0.784694
Iteration 3, loss = inf
Validation score: 0.796939
Iteration 4, loss = inf
Validation score: 0.767347
Iteration 5, loss = inf
Validation score: 0.784694
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.719388
Iteration 2, loss = inf
Validation score: 0.382143
Iteration 3, loss = inf
Validation score: 0.736224
Iteration 4, loss = inf
Validation score: 0.736224
Iteration 5, loss = inf
Validation score: 0.738265
Iteration 6, loss = inf
Validation score: 0.800510
Iteration 7, loss = inf
Validation score: 0.750510
Iteration 8, loss = inf
Validation score: 0.777041
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.370408
Iteration 2, loss = inf
Validation score: 0.732143
Iteration 3, loss = inf
Validation score: 0.742347
Iteration 4, loss = inf
Validation score: 0.760204
Iteration 5, loss = inf
Validation score: 0.797959
Iteration 6, loss = inf
Validation score: 0.772449
Iteration 7, loss = inf
Validation score: 0.755102
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.763776
Iteration 2, loss = inf
Validation score: 0.714796
Iteration 3, loss = inf
Validation score: 0.781122
Iteration 4, loss = inf
Validation score: 0.733163

Iteration 5, loss = inf
Validation score: 0.453571
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Iteration 1, loss = inf
Validation score: 0.787245
Iteration 2, loss = inf
Validation score: 0.728061
Iteration 3, loss = inf
Validation score: 0.790306
Iteration 4, loss = inf
Validation score: 0.800000
Iteration 5, loss = inf
Validation score: 0.745408
Iteration 6, loss = inf
Validation score: 0.772449
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Iteration 1, loss = inf
Validation score: 0.372449
Iteration 2, loss = inf
Validation score: 0.763265
Iteration 3, loss = inf
Validation score: 0.782143
Iteration 4, loss = inf
Validation score: 0.379592
Iteration 5, loss = inf
Validation score: 0.745918
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Iteration 1, loss = inf
Validation score: 0.763776
Iteration 2, loss = inf
Validation score: 0.726531
Iteration 3, loss = inf
Validation score: 0.790816
Iteration 4, loss = inf
Validation score: 0.398980
Iteration 5, loss = inf
Validation score: 0.741327
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Iteration 1, loss = inf
Validation score: 0.783163
Iteration 2, loss = inf
Validation score: 0.760204
Iteration 3, loss = inf
Validation score: 0.727041
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Iteration 1, loss = inf
Validation score: 0.771429
Iteration 2, loss = inf
Validation score: 0.370918
Iteration 3, loss = inf
Validation score: 0.749490

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.748469
Iteration 2, loss = inf
Validation score: 0.726020
Iteration 3, loss = inf
Validation score: 0.792857
Iteration 4, loss = inf
Validation score: 0.810714
Iteration 5, loss = inf
Validation score: 0.797449
Iteration 6, loss = inf
Validation score: 0.744388
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.734184
Iteration 2, loss = inf
Validation score: 0.785714
Iteration 3, loss = inf
Validation score: 0.761735
Iteration 4, loss = inf
Validation score: 0.789796
Iteration 5, loss = inf
Validation score: 0.772959
Iteration 6, loss = inf
Validation score: 0.399490
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.710714
Iteration 2, loss = inf
Validation score: 0.338776
Iteration 3, loss = inf
Validation score: 0.380102
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.714286
Iteration 2, loss = inf
Validation score: 0.753571
Iteration 3, loss = inf
Validation score: 0.780102
Iteration 4, loss = inf
Validation score: 0.730102
Iteration 5, loss = inf
Validation score: 0.762755
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.391837
Iteration 2, loss = inf
Validation score: 0.454592
Iteration 3, loss = inf
Validation score: 0.719388
Iteration 4, loss = inf

Validation score: 0.764796
Iteration 5, loss = inf
Validation score: 0.739796
Iteration 6, loss = inf
Validation score: 0.767347
Iteration 7, loss = inf
Validation score: 0.732653
Iteration 8, loss = inf
Validation score: 0.804082
Iteration 9, loss = inf
Validation score: 0.785204
Iteration 10, loss = inf
Validation score: 0.787755
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.712755
Iteration 2, loss = inf
Validation score: 0.779082
Iteration 3, loss = inf
Validation score: 0.799490
Iteration 4, loss = inf
Validation score: 0.370408
Iteration 5, loss = inf
Validation score: 0.730612
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.750000
Iteration 2, loss = inf
Validation score: 0.765816
Iteration 3, loss = inf
Validation score: 0.716327
Iteration 4, loss = inf
Validation score: 0.737755
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.711735
Iteration 2, loss = inf
Validation score: 0.772959
Iteration 3, loss = inf
Validation score: 0.745918
Iteration 4, loss = inf
Validation score: 0.417857
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.777551
Iteration 2, loss = inf
Validation score: 0.708673
Iteration 3, loss = inf
Validation score: 0.741327
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.761735

Iteration 2, loss = inf
Validation score: 0.778061
Iteration 3, loss = inf
Validation score: 0.736735
Iteration 4, loss = inf
Validation score: 0.744388
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.412245
Iteration 2, loss = inf
Validation score: 0.749490
Iteration 3, loss = inf
Validation score: 0.780102
Iteration 4, loss = inf
Validation score: 0.766837
Iteration 5, loss = inf
Validation score: 0.772959
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.717857
Iteration 2, loss = inf
Validation score: 0.781122
Iteration 3, loss = inf
Validation score: 0.733163
Iteration 4, loss = inf
Validation score: 0.781633
Iteration 5, loss = inf
Validation score: 0.739796
Iteration 6, loss = inf
Validation score: 0.439286
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.720918
Iteration 2, loss = inf
Validation score: 0.752041
Iteration 3, loss = inf
Validation score: 0.763776
Iteration 4, loss = inf
Validation score: 0.406633
Iteration 5, loss = inf
Validation score: 0.746429
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.793878
Iteration 2, loss = inf
Validation score: 0.792347
Iteration 3, loss = inf
Validation score: 0.728571
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.727551
Iteration 2, loss = inf

Validation score: 0.798469
Iteration 3, loss = inf
Validation score: 0.752041
Iteration 4, loss = inf
Validation score: 0.814286
Iteration 5, loss = inf
Validation score: 0.739796
Iteration 6, loss = inf
Validation score: 0.741837
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.763776
Iteration 2, loss = inf
Validation score: 0.759184
Iteration 3, loss = inf
Validation score: 0.725000
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.774490
Iteration 2, loss = inf
Validation score: 0.716327
Iteration 3, loss = inf
Validation score: 0.777041
Iteration 4, loss = inf
Validation score: 0.751020
Iteration 5, loss = inf
Validation score: 0.743878
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.774490
Iteration 2, loss = inf
Validation score: 0.778571
Iteration 3, loss = inf
Validation score: 0.740816
Iteration 4, loss = inf
Validation score: 0.791837
Iteration 5, loss = inf
Validation score: 0.375510
Iteration 6, loss = inf
Validation score: 0.780102
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.719388
Iteration 2, loss = inf
Validation score: 0.787245
Iteration 3, loss = inf
Validation score: 0.412245
Iteration 4, loss = inf
Validation score: 0.765306
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.714286

Iteration 2, loss = inf
Validation score: 0.764286
Iteration 3, loss = inf
Validation score: 0.729082
Iteration 4, loss = inf
Validation score: 0.760204
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.726020
Iteration 2, loss = inf
Validation score: 0.737245
Iteration 3, loss = inf
Validation score: 0.737755
Iteration 4, loss = inf
Validation score: 0.781122
Iteration 5, loss = inf
Validation score: 0.798469
Iteration 6, loss = inf
Validation score: 0.410714
Iteration 7, loss = inf
Validation score: 0.744898
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.777041
Iteration 2, loss = inf
Validation score: 0.729082
Iteration 3, loss = inf
Validation score: 0.765306
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.410204
Iteration 2, loss = inf
Validation score: 0.787245
Iteration 3, loss = inf
Validation score: 0.722449
Iteration 4, loss = inf
Validation score: 0.795918
Iteration 5, loss = inf
Validation score: 0.748469
Iteration 6, loss = inf
Validation score: 0.769898
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.720918
Iteration 2, loss = inf
Validation score: 0.730612
Iteration 3, loss = inf
Validation score: 0.760204
Iteration 4, loss = inf
Validation score: 0.790306
Iteration 5, loss = inf
Validation score: 0.746939
Iteration 6, loss = inf

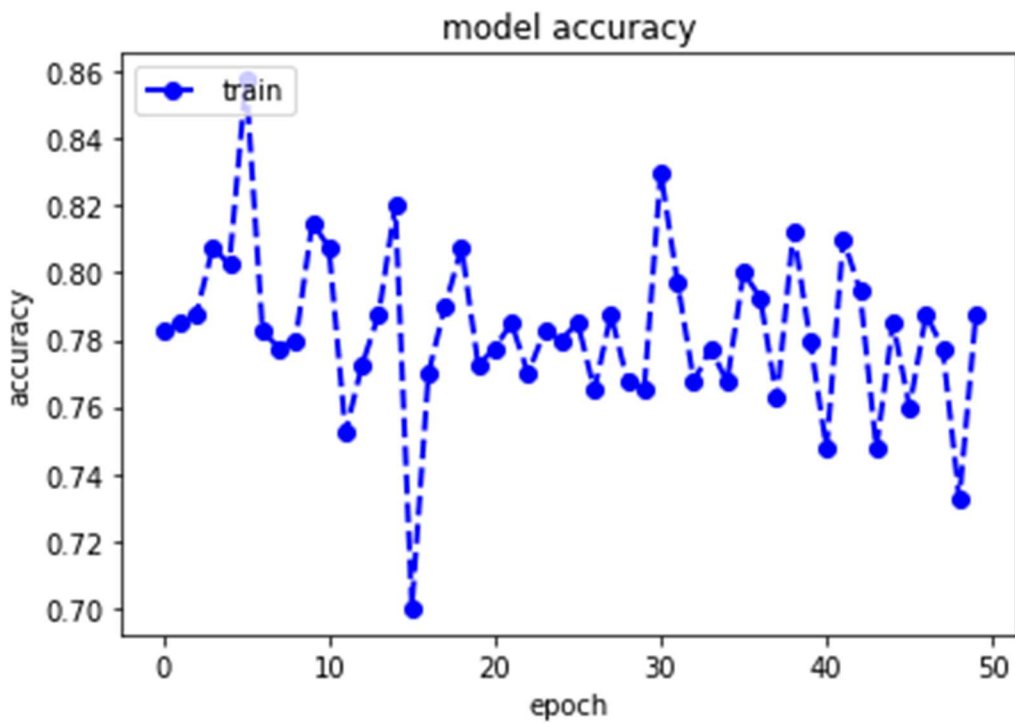
Validation score: 0.765306
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.770918
Iteration 2, loss = inf
Validation score: 0.713776
Iteration 3, loss = inf
Validation score: 0.418367
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.394388
Iteration 2, loss = inf
Validation score: 0.369898
Iteration 3, loss = inf
Validation score: 0.412755
Iteration 4, loss = inf
Validation score: 0.769388
Iteration 5, loss = inf
Validation score: 0.781122
Iteration 6, loss = inf
Validation score: 0.803061
Iteration 7, loss = inf
Validation score: 0.752041
Iteration 8, loss = inf
Validation score: 0.748469
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.720918
Iteration 2, loss = inf
Validation score: 0.791327
Iteration 3, loss = inf
Validation score: 0.726020
Iteration 4, loss = inf
Validation score: 0.760714
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.749490
Iteration 2, loss = inf
Validation score: 0.711735
Iteration 3, loss = inf
Validation score: 0.747449
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.734694
Iteration 2, loss = inf
Validation score: 0.810204
Iteration 3, loss = inf
Validation score: 0.769898
Iteration 4, loss = inf
Validation score: 0.791327
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Iteration 1, loss = inf
Validation score: 0.417857
Iteration 2, loss = inf
Validation score: 0.720408
Iteration 3, loss = inf
Validation score: 0.754592
Iteration 4, loss = inf
Validation score: 0.777041
Iteration 5, loss = inf
Validation score: 0.425000
Iteration 6, loss = inf
Validation score: 0.800510
Iteration 7, loss = inf
Validation score: 0.756122
Iteration 8, loss = inf
Validation score: 0.779082
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.745918
Iteration 2, loss = inf
Validation score: 0.718367
Iteration 3, loss = inf
Validation score: 0.425000
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.741327
Iteration 2, loss = inf
Validation score: 0.726531
Iteration 3, loss = inf
Validation score: 0.782143
Iteration 4, loss = inf
Validation score: 0.757653
Iteration 5, loss = inf
Validation score: 0.401531
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.717347
Iteration 2, loss = inf
Validation score: 0.766837
Iteration 3, loss = inf
Validation score: 0.376531
Iteration 4, loss = inf
Validation score: 0.766327
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.767857
Iteration 2, loss = inf
Validation score: 0.724490
Iteration 3, loss = inf
Validation score: 0.786735
Iteration 4, loss = inf
Validation score: 0.790816
Iteration 5, loss = inf

Validation score: 0.801531
Iteration 6, loss = inf
Validation score: 0.594898
Iteration 7, loss = inf
Validation score: 0.751020
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.737245
Iteration 2, loss = inf
Validation score: 0.739796
Iteration 3, loss = inf
Validation score: 0.746939
Iteration 4, loss = inf
Validation score: 0.741327
Iteration 5, loss = inf
Validation score: 0.783673
Iteration 6, loss = inf
Validation score: 0.745408
Iteration 7, loss = inf
Validation score: 0.744898
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.786224
Iteration 2, loss = inf
Validation score: 0.787755
Iteration 3, loss = inf
Validation score: 0.718367
Iteration 4, loss = inf
Validation score: 0.737245
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Iteration 1, loss = inf
Validation score: 0.739286
Iteration 2, loss = inf
Validation score: 0.735204
Iteration 3, loss = inf
Validation score: 0.762755
Iteration 4, loss = inf
Validation score: 0.814796
Iteration 5, loss = inf
Validation score: 0.769898
Iteration 6, loss = inf
Validation score: 0.786224
Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.
Accuracy: 0.78 (+/- 0.02) [Multi Layers Perceptron]
0.0 0.0
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correct: 85
wrong: 15
Accuracy: 0.94 (+/- 0.01) [Random Forest]

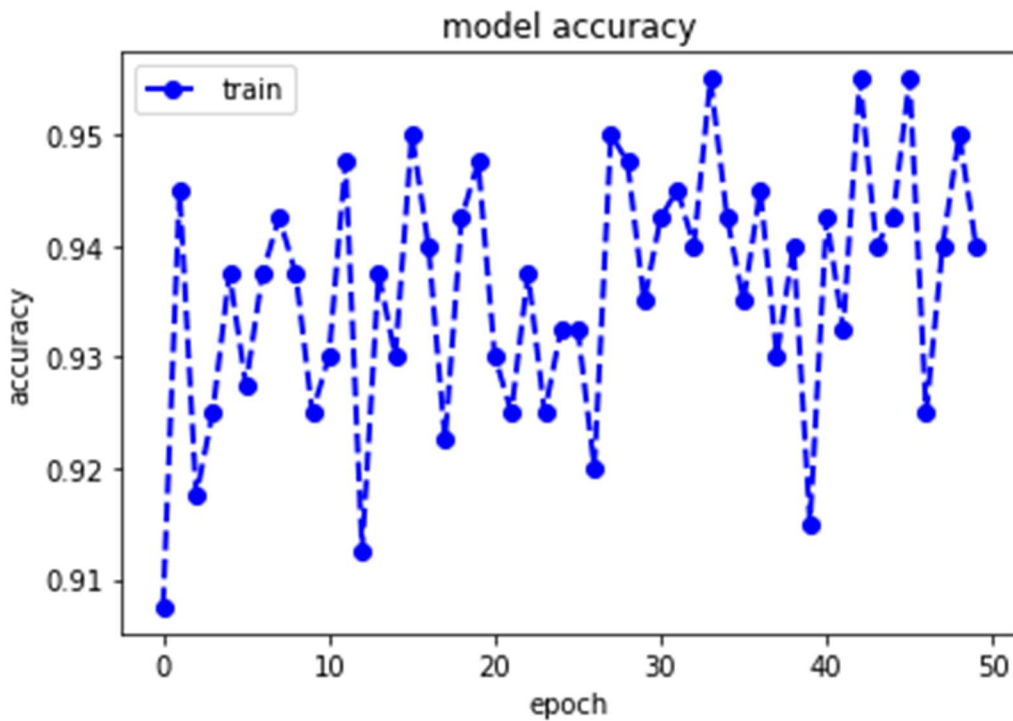
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1.0 1.0
0.0 0.0

```



correct: 100

wrong: 0

Selecting features with genetic algorithm.

gen	nevals	avg	std	min
0	20	[0.65924 2.75]	[0.03906391 1.13468057]	[0.6289
1.	13	max [0.81315 5.]		
1	13	[-1499.4200325 3.75]	[3.57095785e+03 1.57718103e+00]	
		[-1.e+04 1.e+00]	[0.81315 7.]	
2	9	[-1499.37312 4.25]	[3.57097756e+03 1.47901995e+00]	
		[-1.e+04 1.e+00]	[0.8153 7.]	
3	12	[-1499.3086075 5.2]	[3.57100466e+03 5.09901951e-01]	
		[-1.e+04 5.e+00]	[0.8153 7.]	
4	16	[-2999.4304775 5.5]	[4.58294853e+03 1.43178211e+00]	
		[-1.e+04 4.e+00]	[0.8153 11.]	
5	5	[-1499.3080975 5.]	[3.57100487e+03 9.48683298e-01]	
		[-1.e+04 4.e+00]	[0.8153 7.]	

Selecting features with genetic algorithm.

gen	nevals	avg	std	min
	max			
0	20	[0.7022551 3.05]	[0.07957581 1.39552857]	
		[0.63964286 1.]	[0.85755102 5.]	
1	12	[0.7829898 3.75]	[0.07472598 1.1779219]	
		[0.60994898 1.]	[0.85755102 5.]	
2	18	[-2999.41304082 4.9]	[4.58295995e+03]	
1.44568323e+00]		[-1.e+04 2.e+00]	[0.85821429 8.]	
3	6	[-1499.27324235 4.2]	[3.57101951e+03]	
1.63095064e+00]		[-1.e+04 2.e+00]	[0.85821429 8.]	
4	16	[0.85791071 2.95]	[3.07596367e-04]	
8.64580823e-01]		[0.85709184 2.]	[0.85826531 4.]	
5	9	[0.85804082 3.45]	[2.16701639e-04]	
1.02347447e+00]		[0.8575 2.]	[0.85826531 5.]	
6	15	[-499.18406122 3.7]	[2.17963666e+03]	
1.05356538e+00]		[-1.e+04 2.e+00]	[0.87209184 6.]	
7	8	[-499.18268112 4.2]	[2.17963698e+03]	
1.16619038e+00]		[-1.e+04 2.e+00]	[0.87209184 8.]	
8	13	[-999.22278827 4.4]	[3.00025907e+03]	
1.11355287e+00]		[-1.e+04 2.e+00]	[0.87209184 7.]	
9	12	[-1499.26255357 5.15]	[3.57102400e+03]	
1.62095651e+00]		[-1.e+04 3.e+00]	[0.87229592 10.]	
10	11	[-999.2157602 5.15]	[3.00026141e+03]	
1.38834434e+00]		[-1.e+04 4.e+00]	[0.87229592 10.]	
11	12	[-999.21791071 4.8]	[3.0002607e+03]	
9.2736185e-01]		[-1.e+04 4.e+00]	[0.8727551 8.]	
12	12	[-499.18179082 4.5]	[2.17963718e+03]	
9.21954446e-01]		[-1.e+04 4.e+00]	[0.8727551 8.]	
13	14	[-1499.25843367 4.6]	[3.57102573e+03]	
8.60232527e-01]		[-1.e+04 4.e+00]	[0.8727551 7.]	
14	9	[-999.22631378 4.85]	[3.00025790e+03]	
7.26291952e-01]		[-1.e+04 4.e+00]	[0.8727551 7.]	

Selecting features with genetic algorithm.

gen	nevals	avg	std	min	max
0	20	[0.68696173 2.75]	[0.07241971 1.57718103]		
		[0.63821429 1.]	[0.85760204 5.]		
1	10	[-499.25846684 3.]	[2.17961959e+03 1.78885438e+00]		
		[-1.e+04 1.e+00]	[0.85760204 7.]		
2	16	[-1499.30513776 3.95]	[3.57100612e+03]		
1.93584607e+00]		[-10000. 0.]	[0.8697449 8.]		
3	7	[0.85558418 2.8]	[0.01376029 1.36381817]		
		[0.79785714 1.]	[0.8697449 5.]		
4	12	[0.85996173 1.85]	[0.00490067 0.85293611]		
		[0.85622449 1.]	[0.8697449 3.]		
5	11	[-499.17920663 2.35]	[2.17963777e+03]		
1.27573508e+00]		[-1.e+04 1.e+00]	[0.86979592 6.]		
6	13	[-999.22958673 3.35]	[3.00025680e+03]		
1.15217186e+00]		[-1.e+04 2.e+00]	[0.86979592 6.]		
7	12	[-999.21722194 3.7]	[3.00026093e+03]		
1.10000000e+00]		[-1.e+04 3.e+00]	[0.86979592 7.]		
8	8	[-999.21720663 3.9]	[3.00026093e+03]		
1.04403065e+00]		[-1.e+04 3.e+00]	[0.86984694 7.]		
9	10	[-499.18209694 4.35]	[2.17963711e+03]		
7.26291952e-01]		[-1.e+04 3.e+00]	[0.87035714 6.]		
10	13	[-1999.30405357 4.85]	[4.00034797e+03]		
9.63068014e-01]		[-1.e+04 4.e+00]	[0.87035714 7.]		

```

11      8      [0.8701199 4.4      ]      [2.68657696e-04
4.89897949e-01] [0.86964286 4.      ]      [0.87035714 5.      ]
12     11     [-999.21811224  4.35      ]      [3.00026063e+03
7.92148976e-01] [-1.e+04  4.e+00]      [0.87035714 7.      ]
Selecting features with genetic algorithm.
gen      nevals  avg      std
      min      max
0      20      [0.68228061 3.35      ]      [0.05579936 1.35185058]
      [0.62979592 1.      ]      [0.81188776 5.      ]
1      12      [-499.30698469  3.15      ]      [2.17960846e+03 1.65151446e+00]
      [-1.e+04  1.e+00]      [0.81260204 6.      ]
2      12      [-999.30772449  3.05      ]      [3.00023076e+03 1.28354977e+00]
      [-1.e+04  2.e+00]      [0.81515306 6.      ]
3      4      [0.8125 2.3      ]      [0.00212063 0.64031242]
      [0.80755102 2.      ]      [0.81515306 4.      ]
4      8      [0.80031122 2.9      ]      [0.02907576 1.17898261]
      [0.70908163 2.      ]      [0.81933673 5.      ]
5      12      [0.80372959 2.7      ]      [0.03816993 1.14455231]
      [0.63964286 1.      ]      [0.81933673 5.      ]
6      13      [-499.22590306  3.05      ]      [2.17962706e+03 1.02347447e+00]
      [-1.e+04  2.e+00]      [0.82 6.      ]
7      13      [-499.22518367  3.3      ]      [2.17962723e+03 1.05356538e+00]
      [-1.e+04  2.e+00]      [0.82841837 6.      ]
8      10      [-499.22267092  3.55      ]      [2.17962780e+03 1.02347447e+00]
      [-1.e+04  2.e+00]      [0.82857143 6.      ]
9      9      [-1499.30165816  4.55      ]      [3.57100758e+03
1.16081868e+00] [-1.e+04  2.e+00]      [0.82887755 7.      ]
10     13      [-2499.38203827  4.85      ]      [4.3304838e+03
9.0967027e-01] [-1.e+04  3.e+00]      [0.82887755 6.      ]
11     9      [-499.21514541  4.95      ]      [2.17962953e+03
1.28354977e+00] [-1.e+04  3.e+00]      [0.82887755 10.      ]
12     17      [-1499.29541071  5.25      ]      [3.5710102e+03
6.2249498e-01] [-1.e+04  5.e+00]      [0.8297449 7.      ]
13     10      [-2499.37824235  5.2      ]      [4.33048599e+03
6.78232998e-01] [-1.e+04  4.e+00]      [0.8297449 7.      ]
14     9      [-1499.29522449  5.05      ]      [3.57101028e+03
4.97493719e-01] [-1.e+04  4.e+00]      [0.8297449 6.      ]
15     13      [-1999.33640051  5.4      ]      [4.00033180e+03
9.69535971e-01] [-1.e+04  5.e+00]      [0.83132653 9.      ]
16     11      [-999.25324235  5.15      ]      [3.00024892e+03
7.26291952e-01] [-1.e+04  4.e+00]      [0.83132653 8.      ]
17     14      [-2499.37907653  5.25      ]      [4.33048551e+03
1.25996032e+00] [-1.e+04  3.e+00]      [0.83132653 8.      ]
18     11      [-1499.29594898  5.15      ]      [3.57100997e+03
1.10792599e+00] [-1.e+04  3.e+00]      [0.83132653 8.      ]
Selecting features with genetic algorithm.
gen      nevals  avg      std
      min      max
0      20      [0.68102806 2.9      ]      [0.10188378 1.44568323]
      [0.36066327 1.      ]      [0.85739796 5.      ]
1      11      [-1499.36568878  3.8      ]      [3.57098068e+03
1.43527001e+00] [-1.e+04  1.e+00]      [0.85739796 6.      ]
2      13      [-499.23866582  3.35      ]      [2.17962413e+03
1.45859521e+00] [-1.e+04  2.e+00]      [0.85739796 7.      ]
3      11      [-499.19525255  3.15      ]      [2.17963409e+03
1.38834434e+00] [-1.e+04  2.e+00]      [0.85755102 6.      ]

```

```

4      9      [0.84381633 3.35      ]      [0.04262851 1.49248116]
      [0.66770408 2.      ]      [0.85755102 5.      ]
5      14     [-499.19841327 3.9      ]      [2.17963337e+03
1.33790882e+00] [-1.e+04 2.e+00]      [0.85755102 7.      ]
6      13     [-1499.27928061 5.      ]      [3.57101698e+03
9.48683298e-01] [-1.e+04 3.e+00]      [0.85755102 8.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.69660714 3.25      ]      [0.07187537 1.29903811]
      [0.63964286 1.      ]      [0.8575 5.      ]
1      10      [-1999.39066327 4.25      ]      [4.00030467e+03
1.78535711e+00] [-1.e+04 1.e+00]      [0.85760204 8.      ]
2      11      [-1499.304 3.95 ]      [3.57100659e+03
1.35922772e+00] [-1.e+04 3.e+00]      [0.85760204 8.      ]
3      12      [-999.2358852 4.2      ]      [3.00025470e+03
1.12249722e+00] [-1.e+04 3.e+00]      [0.85760204 7.      ]
4      11      [-1499.27107143 4.65      ]      [3.57102043e+03
1.06183803e+00] [-1.e+04 3.e+00]      [0.85770408 7.      ]
5      15      [-1499.27104082 4.75      ]      [3.57102044e+03
8.29156198e-01] [-1.e+04 3.e+00]      [0.85770408 6.      ]
6      9      [-1499.27101786 4.8      ]      [3.57102045e+03
9.79795897e-01] [-1.e+04 3.e+00]      [0.85770408 7.      ]
7      10      [-999.22812245 4.25      ]      [3.00025729e+03
6.98212002e-01] [-1.e+04 3.e+00]      [0.85770408 6.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.66188776 3.05      ]      [0.04197916 1.20312094]
      [0.62632653 1.      ]      [0.79413265 5.      ]
1      11      [0.71115306 3.4      ]      [0.0728751 0.66332496]
      [0.63964286 3.      ]      [0.85811224 5.      ]
2      9      [-499.29012245 3.65      ]      [2.17961233e+03 9.09670270e-01]
      [-1.e+04 3.e+00]      [0.85811224 6.      ]
3      15      [-499.25602296 3.6      ]      [2.17962015e+03 9.16515139e-01]
      [-1.e+04 2.e+00]      [0.85811224 6.      ]
4      13      [-999.25802041 3.9      ]      [3.00024733e+03 1.22065556e+00]
      [-1.e+04 3.e+00]      [0.85811224 7.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.66967092 3.25      ]      [0.05052862 1.3369742 ]
      [0.62617347 1.      ]      [0.8575 5.      ]
1      10      [-1499.40258418 3.75      ]      [3.57096518e+03
2.07062792e+00] [-1.e+04 1.e+00]      [0.8575 8.      ]
2      8      [-2499.4281199 4.75      ]      [4.33045719e+03
1.54515371e+00] [-1.e+04 2.e+00]      [0.8575 8.      ]
3      10      [-1999.36406888 4.8      ]      [4.00031797e+03
1.24899960e+00] [-1.e+04 1.e+00]      [0.85780612 7.      ]
4      11      [-2999.41005612 5.4      ]      [4.58296190e+03
1.65529454e+00] [-1.e+04 2.e+00]      [0.85780612 9.      ]
5      8      [-1499.27213265 4.65      ]      [3.57101998e+03
1.55804365e+00] [-1.e+04 2.e+00]      [0.85780612 9.      ]
6      4      [-499.19419388 3.85      ]      [2.17963434e+03
1.55804365e+00] [-1.e+04 2.e+00]      [0.85780612 9.      ]

```

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.70228827 2.95 [0.63959184 1. ]	] [0.07180694 1.32193041] [0.85714286 5.]
1	8	[0.77111224 2.4 [0.64010204 1. ]	] [0.08938659 1.39283883] [0.8575 5.]
2	8	[0.85191837 1.8 [0.73806122 1. ]	] [0.02628728 1.16619038] [0.87076531 5.]
3	12	[-1499.2722602 [-1.e+04 1.e+00]	3.25] [3.57101993e+03 1.92028644e+00] [0.87132653 7.]
4	10	[0.86343367 2.7 [0.85642857 1. ]	] [0.00697326 1.30766968] [0.87158163 5.]
5	11	[-499.18474745 [-1.e+04 1.e+00]	3.1] [2.17963650e+03 1.37477271e+00] [0.87158163 6.]
6	11	[0.86399745 2.75 [0.72612245 2. ]	] [0.03163511 0.99373035] [0.87158163 5.]
7	13	[0.85893878 2.7 [0.63964286 2. ]	] [0.0504737 0.9] [0.87173469 5.]
8	6	[-999.21680867 [-1.e+04 2.e+00]	3.75] [3.00026106e+03 1.54515371e+00] [0.87173469 8.]
9	7	[0.87158929 3.55 [0.87122449 2. ]	] [1.24216621e-04 9.20597632e-01] [0.87173469 5.]
10	10	[0.86083929 3.8 [0.65535714 3. ]	] [0.0471409 0.81240384] [0.87173469 5.]
11	6	[-1499.25904847 1.49666295e+00] [-1.e+04 3.e+00]	4.4] [3.57102548e+03 [0.87173469 10.]
12	7	[-1499.25902551 1.11691540e+00] [-1.e+04 4.e+00]	4.45] [3.57102549e+03 [0.87173469 8.]

Selecting features with genetic algorithm.

gen	nevals	avg	std	min
			max	
0	20	[0.7041148 3.15 [0.63091837 1. ]	] [0.07762981 1.52561463] [0.86959184 5.]	
1	14	[-1999.40881888 1.74355958e+00] [-1.e+04 1.e+00]	4.4] [4.00029559e+03 [0.86959184 8.]	
2	5	[-499.23108418 1.07121426e+00] [-1.e+04 2.e+00]	4.55] [2.17962587e+03 [0.86959184 8.]	
3	13	[-1999.32354847 1.01365675e+00] [-1.e+04 3.e+00]	4.65] [4.00033823e+03 [0.86959184 6.]	

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.69060459 3.25 [0.63964286 1. ]	] [0.06431748 1.37386317] [0.83056122 5.]
1	9	[0.74702551 3.2 [0.63954082 1. ]	] [0.06211618 1.46969385] [0.83056122 5.]
2	11	[-1999.35049235 1.34536240e+00] [-1.e+04 2.e+00]	4.7] [4.00032475e+03 [0.83056122 8.]
3	12	[-2499.37984694 1.49248116e+00] [-1.e+04 3.e+00]	5.35] [4.33048506e+03 [0.83061224 10.]
4	11	[-999.25277806 3.84057287e-01] [-1.e+04 4.e+00]	5.05] [3.00024907e+03 [0.83061224 6.]
5	12	[-2499.37711224 8.52936105e-01] [-1.e+04 4.e+00]	5.35] [4.33048664e+03 [0.83061224 8.]
6	11	[-2499.37710969 7.81024968e-01] [-1.e+04 4.e+00]	5.3] [4.33048664e+03 [0.83061224 8.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.67295408 3.25]	[0.05440358 1.60857079]
		[0.63943878 1.]	[0.85760204 5.]
1	12	[-499.31520408 3.8]	[2.17960658e+03 1.66132477e+00]
		[-1.e+04 1.e+00]	[0.85760204 6.]
2	16	[-499.26331378 3.2]	[2.17961848e+03 1.72046505e+00]
		[-1.e+04 1.e+00]	[0.87158163 7.]
3	8	[0.82697704 3.1]	[0.04382188 1.37477271]
		[0.73785714 1.]	[0.87158163 5.]
4	9	[0.86190561 2.25]	[0.01709614 1.08972474]
		[0.79321429 1.]	[0.87158163 5.]
5	11	[-1999.30355612 3.2]	[4.00034822e+03]
		[1.60000000e+00 [-1.e+04 1.e+00]	[0.87158163 6.]
6	17	[-499.19064286 2.75]	[2.17963515e+03]
		[1.29903811e+00 [-1.e+04 2.e+00]	[0.87158163 7.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.67330867 3.05]	[0.05976104 1.53215534]
		[0.63040816 1.]	[0.83260204 5.]
1	9	[0.70345153 3.1]	[0.07589552 1.4106736]
		[0.63964286 1.]	[0.83260204 5.]
2	8	[-999.31390561 4.15]	[3.00022870e+03 1.35185058e+00]
		[-1.e+04 1.e+00]	[0.83260204 7.]
3	4	[-999.25763776 4.55]	[3.00024745e+03 1.24398553e+00]
		[-1.e+04 4.e+00]	[0.8544898 9.]
4	8	[-999.24617347 4.9]	[3.00025128e+03 1.70000000e+00]
		[-1.e+04 3.e+00]	[0.85729592 11.]
5	11	[-1499.28277041 4.95]	[3.57101551e+03]
		[8.64580823e-01 [-1.e+04 4.e+00]	[0.85729592 7.]
6	11	[-499.20363776 4.55]	[2.17963217e+03]
		[9.20597632e-01 [-1.e+04 2.e+00]	[0.85729592 7.]
7	14	[-1499.29193878 4.2]	[3.57101166e+03]
		[1.12249722e+00 [-1.e+04 2.e+00]	[0.85785714 7.]
8	14	[-1499.2807602 4.4]	[3.57101636e+03]
		[1.24096736e+00 [-1.e+04 3.e+00]	[0.85785714 7.]
9	18	[-999.23762755 3.75]	[3.00025412e+03]
		[1.04283268e+00 [-1.e+04 2.e+00]	[0.85785714 6.]
10	13	[-499.20585969 3.3]	[2.17963166e+03]
		[9.53939201e-01 [-1.e+04 2.e+00]	[0.85785714 6.]
11	8	[0.85848214 2.75]	[0.00272431 0.698212]
		[0.85785714 2.]	[0.87035714 5.]
12	10	[0.86097704 3.05]	[0.00541565 1.07121426]
		[0.8577551 2.]	[0.87035714 5.]
13	11	[0.84937755 3.55]	[0.05063958 1.1169154]
		[0.63964286 2.]	[0.87035714 5.]
14	14	[-1499.26019643 4.55]	[3.57102499e+03]
		[1.02347447e+00 [-1.e+04 4.e+00]	[0.87035714 8.]
15	13	[-1499.2602449 4.5]	[3.57102497e+03]
		[8.66025404e-01 [-1.e+04 4.e+00]	[0.87035714 7.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.69246684 3.2]	[0.06053181 1.36381817]
		[0.63954082 1.]	[0.82010204 5.]

```

1      15      [-2499.4502449      4.6      ] [4.33044442e+03 1.49666295e+00]
      [-1.e+04  2.e+00]      [0.82010204 7.      ]
2      9      [-2499.41566071      4.65      ] [4.33046439e+03
1.68151717e+00] [-10000.      0.] [0.82010204 8.      ]
3      14      [-2499.39433673      5.15      ] [4.33047670e+03
1.23592071e+00] [-1.e+04  2.e+00] [0.82010204 7.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.71172194 2.85      ] [0.07490294 1.49248116]
      [0.63352041 1.      ] [0.84729592 5.      ]
1      15      [-2499.42254337      4.      ] [4.33046041e+03
1.81659021e+00] [-10000.      0.] [0.85770408 7.      ]
2      9      [-1499.31082908      4.1      ] [3.57100372e+03
1.54596248e+00] [-1.e+04  2.e+00] [0.85770408 8.      ]
3      12      [-2499.383      4.75 ] [4.33048324e+03
1.60857079e+00] [-1.e+04  2.e+00] [0.85770408 9.      ]
4      6      [-1999.33623469      4.7      ] [4.00033188e+03
1.18743421e+00] [-1.e+04  2.e+00] [0.85770408 7.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.70508673 3.1      ] [0.08143312 1.57797338]
      [0.61173469 1.      ] [0.86505102 5.      ]
1      12      [-999.28334184      4.35      ] [3.00023889e+03 1.10792599e+00]
      [-1.e+04  2.e+00] [0.86846939 6.      ]
2      13      [-999.24566327      4.35      ] [3.00025145e+03 1.10792599e+00]
      [-1.e+04  2.e+00] [0.86846939 6.      ]
3      12      [-1499.28271173      4.5      ] [3.57101554e+03
1.39642400e+00] [-1.e+04  1.e+00] [0.86846939 8.      ]
4      14      [-499.19697449      3.9      ] [2.1796337e+03
1.3000000e+00] [-1.e+04  1.e+00] [0.86846939 7.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std      min
      max
0      20      [0.6591199 2.75      ] [0.02088993 1.25996032]
      [0.63882653 1.      ] [0.71607143 5.      ]
1      11      [-999.3778852      3.7      ] [3.00020737e+03 1.05356538e+00]
      [-1.e+04  2.e+00] [0.7472449 6.      ]
2      12      [-1999.43042857      4.05      ] [4.00028479e+03
1.68745370e+00] [-1.e+04  2.e+00] [0.7472449 8.      ]
3      8      [-499.31807398      3.5      ] [2.17960592e+03
9.74679434e-01] [-1.e+04  2.e+00] [0.7472449 6.      ]
4      12      [0.70928827 3.65      ] [0.03689459 0.90967027]
      [0.62709184 2.      ] [0.7522449 5.      ]
5      9      [-999.32757398      4.6      ] [3.00022414e+03
1.15758369e+00] [-1.e+04  3.e+00] [0.81040816 8.      ]
6      14      [-999.31872449      4.85      ] [3.00022709e+03
1.45859521e+00] [-1.e+04  3.e+00] [ 0.81622449 10.      ]
7      15      [-2499.4162398      5.15      ] [4.33046405e+03
1.23592071e+00] [-1.e+04  3.e+00] [0.81622449 8.      ]
8      7      [-499.24097704      4.35      ] [2.17962360e+03
7.26291952e-01] [-1.e+04  3.e+00] [0.81622449 6.      ]
9      10      [-999.26745918      5.2      ] [3.00024418e+03
1.56843871e+00] [-1.e+04  4.e+00] [ 0.81719388 11.      ]
10     10      [-1499.30591837      4.9      ] [3.57100579e+03
7.68114575e-01] [-1.e+04  4.e+00] [0.81719388 7.      ]

```

11	12	[-499.23765051	4.55	]	[2.17962437e+03
9.20597632e-01]		[-1.e+04	4.e+00]		[0.81739796 8.]
12	11	[-999.26405102	4.6	]	[3.00024532e+03
1.35646600e+00]		[-1.e+04	4.e+00]		[0.82627551 9.]
13	10	[-1499.30805102	4.75	]	[3.57100489e+03
9.42072184e-01]		[-1.e+04	4.e+00]		[0.82627551 7.]
14	14	[-999.2704949	4.6	]	[3.00024317e+03
8.00000000e-01]		[-1.e+04	4.e+00]		[0.82627551 7.]
15	9	[-999.26059184	5.	]	[3.00024647e+03
9.48683298e-01]		[-1.e+04	4.e+00]		[0.82627551 8.]

Selecting features with genetic algorithm.

gen	nevals	avg		std	
	min		max		
0	20	[0.66955867 3.15	]	[0.05616011 1.27573508]	
		[0.58153061 1.]		[0.80734694 5.]	
1	12	[-1999.39677296	4.2	]	[4.00030161e+03
1.46969385e+00]		[-1.e+04	2.e+00]		[0.86020408 7.]
2	13	[-1999.37840816	4.7	]	[4.00031080e+03
2.14709106e+00]		[-1.e+04	2.e+00]		[0.86020408 11.]
3	11	[-1999.35832908	4.55	]	[4.00032084e+03
1.35922772e+00]		[-1.e+04	2.e+00]		[0.86270408 7.]
4	6	[-1499.30029082	4.65	]	[3.57100815e+03
1.01365675e+00]		[-1.e+04	2.e+00]		[0.86270408 7.]
5	14	[-3499.44866582	5.1	]	[4.77010058e+03
1.30000000e+00]		[-1.e+04	4.e+00]		[0.86270408 8.]
6	11	[-1499.2893801	4.5	]	[3.57101273e+03
7.41619849e-01]		[-1.e+04	4.e+00]		[0.86290816 6.]
7	13	[-1499.28189541	4.45	]	[3.57101588e+03
8.04673847e-01]		[-1.e+04	3.e+00]		[0.86290816 6.]
8	11	[-2499.36404337	5.1	]	[4.33049419e+03
1.04403065e+00]		[-1.e+04	4.e+00]		[0.86290816 8.]
9	11	[0.86327551 4.8	]	[0.0017432 0.4	
		[0.86270408 4.]		[0.87086735 5.]	
10	8	[-499.17967347	5.05	]	[2.17963767e+03
7.39932429e-01]		[-1.e+04	4.e+00]		[0.87086735 8.]
11	11	[-499.19103571	4.8	]	[2.17963506e+03
5.09901951e-01]		[-1.e+04	4.e+00]		[0.87086735 6.]
12	10	[-499.18967857	4.65	]	[2.17963537e+03
5.72276157e-01]		[-1.e+04	4.e+00]		[0.87086735 6.]

Selecting features with genetic algorithm.

gen	nevals	avg		std	
	min		max		
0	20	[0.69077296 2.9	]	[0.06162086 1.17898261]	
		[0.63918367 1.]		[0.81612245 5.]	
1	7	[-499.29659949	3.6	]	[2.17961084e+03 1.20000000e+00]
		[-1.e+04	2.e+00]		[0.81612245 6.]
2	8	[-1499.33621173	4.35	]	[3.57099306e+03
1.52561463e+00]		[-1.e+04	2.e+00]		[0.81612245 8.]
3	12	[-1499.32732908	5.1	]	[3.57099679e+03
1.51327460e+00]		[-1.e+04	3.e+00]		[0.81612245 10.]

Selecting features with genetic algorithm.

gen	nevals	avg		std	
	min		max		
0	20	[0.71030102 2.95	]	[0.08322371 1.16081868]
		[0.63158163 1.]		[0.86943878 5.]	
1	12	[-2999.46351276	4.4]	[4.58292691e+03
2.13072758e+00]		[-10000. 0.]		[0.86943878 8.]	

```

2      6      [-499.25171684    3.85      ]      [2.17962114e+03
1.27573508e+00] [-1.e+04  1.e+00]      [0.86943878  6.      ]
3      8      [-999.2441148    4.55      ]      [3.00025196e+03
1.11691540e+00] [-1.e+04  2.e+00]      [0.86943878  7.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.69222194  3.25      ]      [0.06495673  1.44481833]
      [0.60591837  1.      ]      [0.81122449  5.      ]
1      9      [-1499.3462602    4.1      ]      [3.57098884e+03  1.44568323e+00]
      [-1.e+04  2.e+00]      [0.85744898  7.      ]
2      8      [-999.26705102    3.55      ]      [3.00024432e+03  1.62711401e+00]
      [-1.e+04  2.e+00]      [0.85760204  9.      ]
3      14      [0.83381122  2.95      ]      [0.04966401  0.92059763]
      [0.63964286  1.      ]      [0.85760204  5.      ]
4      14      [-499.18508418    3.1      ]      [2.17963643e+03  1.47986486e+00]
      [-1.e+04  2.e+00]      [0.86887755  8.      ]
5      14      [-999.22604337    3.35      ]      [3.00025799e+03  1.90459970e+00]
      [-1.e+04  2.e+00]      [0.86984694  8.      ]
6      5      [0.86275765  3.25      ]      [0.00581329  1.3369742 ]
      [0.85658163  2.      ]      [0.86984694  5.      ]
7      12      [-1499.2634898    4.65      ]      [3.57102361e+03  1.73997126e+00]
      [-1.e+04  2.e+00]      [0.86984694  8.      ]
8      6      [-999.21808929    4.65      ]      [3.00026064e+03  1.01365675e+00]
      [-1.e+04  3.e+00]      [0.86984694  8.      ]
9      11      [-1499.27144643    4.25      ]      [3.57102027e+03
1.13468057e+00] [-1.e+04  3.e+00]      [0.86994898  7.      ]
10     8      [-499.17358673    4.15      ]      [2.17963906e+03
1.19478031e+00] [-1.e+04  3.e+00]      [0.87045918  8.      ]
11     8      [-1999.30419133    4.85      ]      [4.00034790e+03
1.42390309e+00] [-1.e+04  3.e+00]      [0.87045918  9.      ]
12     14      [-1999.30396939    5.25      ]      [4.00034802e+03
6.98212002e-01] [-1.e+04  4.e+00]      [0.87045918  7.      ]
13     11      [-2499.34730357    5.25      ]      [4.33050385e+03
9.42072184e-01] [-1.e+04  4.e+00]      [0.87076531  8.      ]
14     4      [-499.17302296    4.75      ]      [2.17963919e+03
5.36190265e-01] [-1.e+04  4.e+00]      [0.87076531  6.      ]
15     13      [-499.18558929    4.45      ]      [2.17963631e+03
5.89491306e-01] [-1.e+04  4.e+00]      [0.87076531  6.      ]
16     15      [-1499.28420408    4.55      ]      [3.57101491e+03
7.39932429e-01] [-1.e+04  4.e+00]      [0.87076531  6.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.70355102  3.4      ]      [0.0704683  1.24096736]
      [0.63964286  1.      ]      [0.85765306  5.      ]
1      10      [-499.27529082    3.85      ]      [2.17961573e+03  1.10792599e+00]
      [-1.e+04  2.e+00]      [0.85765306  7.      ]
2      9      [-1499.32140816    4.15      ]      [3.57099928e+03
1.45859521e+00] [-1.e+04  1.e+00]      [0.86586735  7.      ]
3      11      [-499.2233852    4.4      ]      [2.17962764e+03
8.60232527e-01] [-1.e+04  2.e+00]      [0.86586735  6.      ]
4      11      [-999.2440051    4.3      ]      [3.00025200e+03
8.42614977e-01] [-1.e+04  3.e+00]      [0.86586735  6.      ]
5      8      [-1499.27952296    4.55      ]      [3.57101688e+03
1.07121426e+00] [-1.e+04  2.e+00]      [0.86586735  7.      ]

```

Selecting features with genetic algorithm.

gen	nevals	avg	std	min
0	20	[0.7037551 3.]	[0.07791537 1.37840488]	
		[0.62943878 1.]	[0.85765306 5.]	
1	14	[-499.30551531 3.15]	[2.17960880e+03 1.68151717e+00]	
		[-1.e+04 1.e+00]	[0.85765306 6.]	
2	9	[-499.2581199 4.05]	[2.17961967e+03 1.53215534e+00]	
		[-1.e+04 1.e+00]	[0.85765306 7.]	
3	7	[-999.23351786 4.9]	[3.00025549e+03 8.30662386e-01]	
		[-1.e+04 4.e+00]	[0.85765306 7.]	
4	7	[-499.19241837 4.8]	[2.17963474e+03 6.78232998e-01]	
		[-1.e+04 4.e+00]	[0.85770408 7.]	
5	11	[-1499.27098724 4.65]	[3.57102046e+03]	
		[1.01365675e+00] [-1.e+04 3.e+00]	[0.85770408 7.]	
6	15	[-1499.27347194 4.45]	[3.57101942e+03]	
		[1.02347447e+00] [-1.e+04 3.e+00]	[0.85806122 7.]	
7	12	[-1499.27033163 4.2]	[3.57102074e+03]	
		[1.07703296e+00] [-1.e+04 3.e+00]	[0.87005102 7.]	
8	8	[-499.1838801 4.3]	[2.17963670e+03]	
		[7.14142843e-01] [-1.e+04 3.e+00]	[0.87005102 6.]	
9	9	[-1499.26717857 5.05]	[3.57102206e+03]	
		[1.16081868e+00] [-1.e+04 4.e+00]	[0.87005102 9.]	
10	10	[-1499.26169133 5.1]	[3.57102437e+03]	
		[6.24499800e-01] [-1.e+04 4.e+00]	[0.87005102 7.]	

Selecting features with genetic algorithm.

gen	nevals	avg	std	min
0	20	[0.6823801 3.6]	[0.04983762 1.42828569]	
		[0.62591837 1.]	[0.80938776 5.]	
1	10	[-999.33266837 4.4]	[3.00022244e+03 1.20000000e+00]	
		[-1.e+04 1.e+00]	[0.85729592 6.]	
2	9	[-1999.37631378 4.9]	[4.00031184e+03]	
		[7.68114575e-01] [-1.e+04 3.e+00]	[0.8575 6.]	
3	14	[-2999.43252806 4.8]	[4.58294719e+03]	
		[1.20830460e+00] [-1.e+04 3.e+00]	[0.8575 7.]	
4	9	[-1499.29511735 4.6]	[3.57101032e+03]	
		[1.39283883e+00] [-1.e+04 2.e+00]	[0.85770408 8.]	
5	8	[-499.19513265 4.]	[2.17963412e+03]	
		[1.58113883e+00] [-1.e+04 2.e+00]	[0.85770408 9.]	
6	7	[-999.22842857 3.45]	[3.00025719e+03]	
		[1.68745370e+00] [-1.e+04 2.e+00]	[0.85770408 7.]	
7	9	[-499.19610714 2.6]	[2.17963390e+03]	
		[1.28062485e+00] [-1.e+04 1.e+00]	[0.85770408 7.]	
8	10	[0.85765816 1.95]	[1.59637631e-04]	
		[5.89491306e-01] [0.8569898 1.]	[0.85770408 3.]	
9	9	[-499.19549745 1.95]	[2.17963404e+03]	
		[1.20312094e+00] [-1.e+04 1.e+00]	[0.86964286 6.]	
10	10	[0.86133673 1.95]	[0.00559712 0.97339612]	
		[0.85744898 1.]	[0.87168367 4.]	
11	7	[0.86460204 2.5]	[0.00622517 1.07238053]	
		[0.85770408 1.]	[0.87168367 5.]	
12	12	[-999.22938776 3.25]	[3.00025687e+03]	
		[1.33697420e+00] [-1.e+04 1.e+00]	[0.87168367 6.]	
13	8	[-499.17282398 2.9]	[2.17963924e+03]	
		[1.09087121e+00] [-1.e+04 2.e+00]	[0.87168367 6.]	
14	10	[0.87049745 2.5]	[0.00318229 0.80622577]	
		[0.8572449 2.]	[0.87168367 5.]	

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.69038265 2.9]	[0.07218033 1.4106736]
		[0.63836735 1.]	[0.87122449 5.]
1	16	[-1999.40995153 4.25]	[4.00029502e+03]
1.72843860e+00]		[-1.e+04 1.e+00]	[0.87122449 8.]
2	15	[-1499.35872704 4.55]	[3.57098360e+03]
1.20312094e+00]		[-1.e+04 2.e+00]	[0.87122449 8.]
3	8	[-999.26741837 4.4]	[3.00024419e+03]
1.62480768e+00]		[-1.e+04 2.e+00]	[0.87122449 10.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.70535969 3.2]	[0.0701175 1.77763888]
		[0.63831633 1.]	[0.85785714 5.]
1	11	[-1499.34609439 3.95]	[3.57098891e+03]
2.08506595e+00]		[-1.e+04 1.e+00]	[0.85785714 8.]
2	11	[-499.23664541 3.]	[2.1796246e+03]
1.8973666e+00]		[-1.e+04 1.e+00]	[0.87193878 7.]
3	13	[-999.23221173 2.65]	[3.00025593e+03]
1.65151446e+00]		[-1.e+04 1.e+00]	[0.87193878 6.]
4	11	[0.86362755 2.3]	[0.00991925 0.9539392]
		[0.83234694 1.]	[0.87193878 4.]
5	9	[0.86840816 2.3]	[0.01538958 0.45825757]
		[0.80132653 2.]	[0.87193878 3.]
6	11	[0.87189286 2.05]	[2.00153523e-04]
2.17944947e-01]		[0.87102041 2.]	[0.87193878 3.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.70697449 3.45]	[0.07796759 1.46543509]
		[0.60632653 1.]	[0.87132653 5.]
1	14	[-2499.41423469 4.1]	[4.33046521e+03]
1.84119526e+00]		[-1.e+04 1.e+00]	[0.87132653 8.]
2	8	[-499.23076276 3.8]	[2.17962595e+03]
1.12249722e+00]		[-1.e+04 2.e+00]	[0.87153061 6.]
3	10	[-2499.36331122 4.75]	[4.33049461e+03]
1.21963109e+00]		[-1.e+04 2.e+00]	[0.87153061 8.]
4	11	[-999.237625 4.55]	[3.00025413e+03]
7.39932429e-01]		[-1.e+04 3.e+00]	[0.87153061 6.]
5	7	[-1499.26926531 4.75]	[3.57102118e+03]
1.21963109e+00]		[-1.e+04 2.e+00]	[0.87153061 8.]
6	12	[-1499.27455867 4.25]	[3.57101896e+03]
1.17792190e+00]		[-1.e+04 2.e+00]	[0.87173469 7.]
7	9	[-999.2157449 4.25]	[3.00026142e+03]
1.44481833e+00]		[-1.e+04 2.e+00]	[0.87173469 9.]
8	15	[-1499.25915306 3.8]	[3.57102543e+03]
1.40000000e+00]		[-1.e+04 2.e+00]	[0.87173469 7.]
9	11	[-1499.25910969 3.55]	[3.57102545e+03]
1.65755845e+00]		[-1.e+04 2.e+00]	[0.87173469 9.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.67899745 3.15]	[0.06083074 1.45859521]
		[0.63076531 1.]	[0.8577551 5.]

1	12	[-1499.37807653	3.65	]	[3.57097548e+03
1.82414363e+00]		[-1.e+04 2.e+00]			[0.8577551 8.]
2	8	[-1499.31911735	3.5	]	[3.57100024e+03
1.59687194e+00]		[-1.e+04 2.e+00]			[0.85785714 7.]
3	9	[-499.21853316	3.15	]	[2.17962875e+03
1.19478031e+00]		[-1.e+04 2.e+00]			[0.85785714 6.]
4	13	[-499.19902551	3.05	]	[2.17963323e+03
1.53215534e+00]		[-1.e+04 2.e+00]			[0.85785714 8.]
5	12	[-1499.27364541	3.05	]	[3.57101934e+03
1.43090880e+00]		[-1.e+04 2.e+00]			[0.8580102 6.]
6	10	[0.84688776 2.65		]	[0.04754567 1.01365675]
		[0.63964286 1.]		[0.85811224 5.]	
7	11	[0.8577449 2.85		]	[4.58218941e-04
1.01365675e+00]		[0.85586735 1.]		[0.85811224 5.]	
8	11	[-999.22780102	3.1	]	[3.00025740e+03
1.84119526e+00]		[-1.e+04 1.e+00]		[0.85811224 7.]	
9	13	[-1499.28796684	4.2	]	[3.57101333e+03
2.01494417e+00]		[-1.e+04 1.e+00]		[0.85816327 9.]	
10	13	[-499.18497194	3.5	]	[2.17963645e+03
1.24498996e+00]		[-1.e+04 2.e+00]		[0.85816327 7.]	
11	6	[0.84395153 2.85		]	[0.04128867 0.90967027]
		[0.67704082 2.]		[0.85816327 4.]	
12	11	[0.84070153 2.45		]	[0.05387083 1.02347447]
		[0.64045918 1.]		[0.85841837 5.]	
13	8	[0.82504847 2.5		]	[0.07331502 0.92195445]
		[0.63964286 2.]		[0.85841837 5.]	
14	14	[-499.18721429	2.55	]	[2.17963594e+03
1.07121426e+00]		[-1.e+04 2.e+00]		[0.85841837 6.]	
15	8	[-499.197125	2.9	]	[2.17963366e+03
9.94987437e-01]		[-1.e+04 2.e+00]		[0.85841837 6.]	

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.69632653 2.9	[0.06515491 1.47986486]
		[0.63811224 1.]	[0.86653061 5.]
1	8	[0.74389286 3.85	[0.06878327 1.10792599]
		[0.63964286 1.]	[0.86653061 5.]
2	14	[-499.26780102 4.3	[2.17961745e+03 1.22882057e+00]
		[-1.e+04 1.e+00]	[0.86653061 7.]
3	12	[-2999.46202296 5.2	[4.58292788e+03
1.83303028e+00]		[-1.e+04 3.e+00]	[0.86653061 9.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.66955612 2.95	[0.12327221 1.16081868]
		[0.36061224 1.]	[0.85744898 5.]
1	11	[-499.28667092 3.8	[2.17961312e+03 1.20830460e+00]
		[-1.e+04 2.e+00]	[0.85744898 6.]
2	16	[-2499.40505357 4.65	[4.33047051e+03
1.73997126e+00]		[-1.e+04 2.e+00]	[0.85744898 9.]
3	6	[-499.21235204 3.4	[2.17963017e+03
1.42828569e+00]		[-1.e+04 1.e+00]	[0.85760204 6.]
4	11	[-499.20362245 2.85	[2.17963217e+03
1.35185058e+00]		[-1.e+04 1.e+00]	[0.85760204 6.]
5	16	[-499.21122449 2.2	[2.17963043e+03
1.66132477e+00]		[-1.e+04 1.e+00]	[0.85760204 8.]

6	13	[0.84828316 1.65	]	[0.04128398 0.96306801]
		[0.66836735 1.	]	[0.86137755 5.
7	11	[0.83525 2.25	]	[0.06496381 1.54515371]
		[0.63964286 1.	]	[0.87142857 5.
8	13	[0.85371429 2.75	]	[0.04107665 1.51244835]
		[0.67688776 1.	]	[0.87183673 5.
9	14	[-999.22591071 3.7	]	[3.00025803e+03
1.51986842e+00]		[-1.e+04 1.e+00]		[0.87183673 7.
10	13	[-999.21630867 3.7	]	[3.00026123e+03
1.22882057e+00]		[-1.e+04 2.e+00]		[0.87183673 6.
11	12	[-1499.25941327 4.95	]	[3.57102532e+03
1.24398553e+00]		[-1.e+04 3.e+00]		[0.87183673 8.

Selecting features with genetic algorithm.

gen	nevals	avg		std
	min		max	
0	20	[0.68301786 3.25	]	[0.06706767 1.3369742]
		[0.60005102 1.	]	[0.85760204 5.
1	12	[-999.35093367 2.9	]	[3.00021636e+03 1.51327460e+00]
		[-1.e+04 1.e+00]		[0.85760204 6.
2	12	[-499.24756633 2.25	]	[2.17962209e+03 1.37386317e+00]
		[-1.e+04 1.e+00]		[0.85760204 6.
3	9	[0.82658929 2.	]	[0.06377758 1.30384048]
		[0.64933673 1.	]	[0.86954082 5.
4	13	[0.83996939 1.75	]	[0.05437359 0.8291562]
		[0.64372449 1.	]	[0.86954082 3.
5	8	[0.85193367 2.3	]	[0.04710834 0.78102497]
		[0.64811224 1.	]	[0.86954082 3.
6	9	[-999.23161735 3.05	]	[3.00025613e+03 1.24398553e+00]
		[-1.e+04 1.e+00]		[0.86954082 6.

Selecting features with genetic algorithm.

gen	nevals	avg		std
	min		max	
0	20	[0.70080612 3.45	]	[0.07106782 1.1169154]
		[0.63882653 1.	]	[0.8575 5.
1	10	[0.76744388 3.8	]	[0.07958543 0.9797959]
		[0.63964286 2.	]	[0.8575 5.
2	12	[-1499.29609184 3.75	]	[3.57100992e+03
1.66958079e+00]		[-1.e+04 1.e+00]		[0.8575 7.
3	14	[-999.24114541 3.45	]	[3.00025295e+03
1.68745370e+00]		[-1.e+04 2.e+00]		[0.8575 8.
4	13	[0.85807143 2.6	]	[0.00308227 0.91651514]
		[0.85647959 1.	]	[0.87142857 5.
5	12	[-499.19341837 2.85	]	[2.17963451e+03
1.15217186e+00]		[-1.e+04 1.e+00]		[0.87142857 6.
6	12	[-499.17752551 3.3	]	[2.17963816e+03
1.18743421e+00]		[-1.e+04 2.e+00]		[0.87142857 7.
7	10	[-499.17420918 3.4	]	[2.17963892e+03
1.24096736e+00]		[-1.e+04 2.e+00]		[0.87142857 8.
8	11	[0.85645663 3.15	]	[0.04924564 0.57227616]
		[0.6577551 2.	]	[0.87142857 5.
9	6	[0.87139796 2.95	]	[1.33435682e-04
6.68954408e-01]		[0.87081633 2.	]	[0.87142857 5.
10	10	[0.86124235 2.7	]	[0.04440072 0.78102497]
		[0.66770408 2.	]	[0.87142857 5.

Selecting features with genetic algorithm.

gen	nevals	avg		std
	min		max	

0	20	[0.67591582 3.15	]	[0.05661802 1.15217186]
		[0.63346939 1.	]	[0.85709184 5.]
1	10	[0.72354082 3.3	]	[0.0713083 1.14455231]
		[0.63964286 1.	]	[0.85719388 5.]
2	17	[-1999.38805612	3.4]
2.24499443e+00]		[-10000. 0.]		[0.87127551 9.]
3	6	[0.83753571 2.65	]	[0.0597597 1.52561463]
		[0.63964286 1.	]	[0.87127551 5.]
4	14	[-1499.27445153	3.7]
2.07605395e+00]		[-1.e+04 1.e+00]		[0.87127551 9.]
5	9	[-999.22954592	4.3]
1.67630546e+00]		[-1.e+04 1.e+00]		[0.87127551 8.]
6	10	[-499.17299235	3.55]
9.73396117e-01]		[-1.e+04 2.e+00]		[0.87127551 6.]
7	5	[-499.17228316	3.3]
1.00498756e+00]		[-1.e+04 2.e+00]		[0.87137755 6.]
8	10	[0.85242602 3.3	]	[0.05822164 1.00498756]
		[0.63964286 2.	]	[0.87137755 5.]
9	16	[-1499.2782551	4.15]
1.45859521e+00]		[-1.e+04 2.e+00]		[0.87163265 7.]
10	8	[-499.18404337	3.65]
1.06183803e+00]		[-1.e+04 2.e+00]		[0.87163265 6.]
11	12	[0.86139031 3.65	]	[0.0442945 0.79214898]
		[0.66831633 2.	]	[0.87163265 5.]
12	10	[-499.18454082	3.7]
9.00000000e-01]		[-1.e+04 3.e+00]		[0.87163265 6.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.71520408 3.4]
		[0.63964286 1.]
1	13	[-999.31015561	3.9
		[-1.e+04 1.e+00]	
2	10	[-999.29590561	3.9
		[-1.e+04 1.e+00]	
3	14	[-499.23753316	3.9
		[-1.e+04 2.e+00]	

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.67040306 2.3]
		[0.63877551 1.]
1	8	[0.72339541 2.25]
		[0.63964286 1.]
2	11	[-499.27292857	2.15
		[-1.e+04 1.e+00]	
3	13	[-999.28527296	2.9
		[-1.e+04 1.e+00]	
4	11	[0.79472449 2.8]
		[0.66841837 1.]
5	13	[0.81677296 3.4]
		[0.80923469 2.]
6	10	[-1999.34771939	4.25
1.37386317e+00]		[-1.e+04 2.e+00]	
7	12	[-999.28207908	3.75
1.08972474e+00]		[-1.e+04 2.e+00]	

8	13	[-499.22220918	3.65	]	[2.17962791e+03
9.09670270e-01]		[-1.e+04 3.e+00]			[0.8344898 6.]
9	11	[-1499.29918878	3.9	]	[3.57100861e+03
1.44568323e+00]		[-1.e+04 3.e+00]			[0.8344898 8.]
10	11	[-999.27472704	4.15	]	[3.00024176e+03
1.01365675e+00]		[-1.e+04 2.e+00]			[0.83836735 6.]
11	13	[-999.24929592	4.25	]	[3.00025023e+03
8.29156198e-01]		[-1.e+04 3.e+00]			[0.83836735 6.]
12	15	[-2499.39631633	5.2	]	[4.33047556e+03
1.91311265e+00]		[-1.e+04 2.e+00]			[0.83836735 10.]
13	12	[-1499.288	5.]		[3.57101331e+03
7.74596669e-01]		[-1.e+04 3.e+00]			[0.83836735 7.]

Selecting features with genetic algorithm.

gen	nevals	avg		std	
	min		max		
0	20	[0.68632143 3.1	]	[0.06673338 1.5132746]	
		[0.63943878 1.]		[0.86969388 5.]	
1	10	[-999.34237755	3.9	]	[3.00021921e+03 1.54596248e+00]
		[-1.e+04 1.e+00]			[0.86969388 7.]
2	11	[-2999.4363699	4.65	]	[4.58294468e+03 1.19478031e+00]
		[-1.e+04 2.e+00]			[0.86969388 7.]
3	10	[-1999.32472704	4.4	]	[4.00033764e+03
1.15758369e+00]		[-1.e+04 3.e+00]			[0.86969388 7.]

Selecting features with genetic algorithm.

gen	nevals	avg		std	
	min		max		
0	20	[0.66183163 3.35	]	[0.08619103 1.23592071]
		[0.36066327 1.]		[0.86938776 5.]	
1	15	[-1499.40359439	4.]	[3.57096476e+03	
1.58113883e+00]		[-1.e+04 1.e+00]		[0.8694898 7.]	
2	10	[0.7351148 4.05	]	[0.07205563 1.02347447]
		[0.65877551 1.]		[0.8694898 5.]	
3	12	[-499.24790561	4.4]	[2.17962202e+03
6.63324958e-01]		[-1.e+04 3.e+00]		[0.8694898 6.]	
4	11	[-2499.36025255	4.9]	[4.33049638e+03
1.78605711e+00]		[-1.e+04 3.e+00]		[0.8694898 9.]	
5	11	[-499.17855357	4.2]	[2.17963792e+03
6.78232998e-01]		[-1.e+04 3.e+00]		[0.86989796 6.]	
6	11	[-1499.26085459	4.5]	[3.57102472e+03
1.36014705e+00]		[-1.e+04 3.e+00]		[0.8702551 8.]	
7	10	[-999.21725765	4.35]	[3.00026091e+03
9.63068014e-01]		[-1.e+04 3.e+00]		[0.8702551 6.]	
8	7	[-999.21703061	4.9]	[3.00026099e+03
1.09087121e+00]		[-1.e+04 3.e+00]		[0.8702551 8.]	
9	13	[-999.21693622	4.7]	[3.00026102e+03
7.81024968e-01]		[-1.e+04 4.e+00]		[0.8702551 7.]	

Selecting features with genetic algorithm.

gen	nevals	avg		std	
	min		max		
0	20	[0.68460459 3.15	]	[0.04582089 1.58981131]
		[0.63943878 1.]		[0.78183673 5.]	
1	8	[-1499.38439286	4.55]	[3.57097282e+03
1.49916644e+00]		[-1.e+04 2.e+00]		[0.78183673 8.]	
2	11	[-499.30012755	3.95]	[2.17961003e+03
1.11691540e+00]		[-1.e+04 2.e+00]		[0.81107143 7.]	
3	10	[-999.31317602	4.1]	[3.00022894e+03
1.04403065e+00]		[-1.e+04 2.e+00]		[0.81107143 6.]	

```

4      11      [0.78779847 4.15      ]      [0.03979139 0.65383484]
      [0.63964286 3.      ]      [0.81107143 5.      ]
5      10      [-1999.36277296      4.6      ]      [4.00031861e+03
1.15758369e+00] [-1.e+04 2.e+00]      [0.81107143 7.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std      min
max
0      20      [0.6798801 2.75      ]      [0.06079818 1.40978722]
      [0.60714286 1.      ]      [0.85683673 5.      ]
1      14      [-499.32459694      3.4      ]      [2.17960442e+03 1.28062485e+00]
      [-1.e+04 1.e+00]      [0.85683673 6.      ]
2      12      [-499.26633929      3.9      ]      [2.17961779e+03 8.88819442e-01]
      [-1.e+04 3.e+00]      [0.85765306 6.      ]
3      14      [-1499.29272704      3.95      ]      [3.57101133e+03
1.24398553e+00] [-1.e+04 2.e+00]      [0.85765306 7.      ]
4      8      [0.85333163 3.35      ]      [0.01436797 1.01365675]
      [0.81107143 2.      ]      [0.87040816 5.      ]
5      14      [-1999.31999235      4.      ]      [4.00034000e+03
2.32379001e+00] [-1.e+04 1.e+00]      [0.87040816 9.      ]
6      8      [-999.22701276      3.2      ]      [3.00025766e+03
1.80554701e+00] [-1.e+04 1.e+00]      [0.87040816 8.      ]
7      13      [-999.23392602      3.35      ]      [3.00025536e+03
1.71099386e+00] [-1.e+04 1.e+00]      [0.87040816 6.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
min      max
0      20      [0.68108418 2.9      ]      [0.07021679 1.4106736 ]
      [0.61637755 1.      ]      [0.82693878 5.      ]
1      15      [-499.278      3.4      ]      [2.17961511e+03 1.31909060e+00]
      [-1.e+04 1.e+00]      [0.83010204 6.      ]
2      7      [-999.28154847      3.7      ]      [3.00023948e+03 1.48660687e+00]
      [-1.e+04 1.e+00]      [0.83010204 8.      ]
3      11      [-999.25794898      3.65      ]      [3.00024735e+03 1.10792599e+00]
      [-1.e+04 2.e+00]      [0.83081633 7.      ]
4      7      [0.82837245 3.35      ]      [0.00548665 0.57227616]
      [0.8127551 3.      ]      [0.83969388 5.      ]
5      16      [-499.22130102      3.8      ]      [2.17962812e+03 9.79795897e-01]
      [-1.e+04 3.e+00]      [0.83969388 7.      ]
6      10      [-1499.29295408      5.05      ]      [3.57101123e+03
1.28354977e+00] [-1.e+04 3.e+00]      [0.83969388 9.      ]
7      11      [-999.25310969      4.6      ]      [3.00024896e+03
8.00000000e-01] [-1.e+04 4.e+00]      [0.83969388 7.      ]
8      13      [-999.24453061      4.4      ]      [3.00025182e+03
7.34846923e-01] [-1.e+04 3.e+00]      [0.84418367 6.      ]
9      11      [-499.20682653      4.35      ]      [2.17963144e+03
5.72276157e-01] [-1.e+04 4.e+00]      [0.84418367 6.      ]
10     9      [0.84185714 4.4      ]      [0.00306286 0.48989795]
      [0.83969388 4.      ]      [0.85153061 5.      ]
11     9      [-1499.28283163      5.2      ]      [3.57101549e+03
1.36381817e+00] [-1.e+04 4.e+00]      [0.85153061 9.      ]
12     14      [-2499.36558673      5.15      ]      [4.33049330e+03
5.72276157e-01] [-1.e+04 4.e+00]      [0.85153061 6.      ]
13     11      [-999.23679337      5.      ]      [3.00025440e+03
4.47213595e-01] [-1.e+04 4.e+00]      [0.85153061 6.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
min      max

```

```

0      20      [0.68568622 3.      ]      [0.06985071 1.44913767]
      [0.63867347 1.      ]      [0.85709184 5.      ]
1      10      [-1499.36845153      4.2      ]      [3.57097952e+03
1.53622915e+00] [-1.e+04 1.e+00]      [0.85790816 7.      ]
2      8      [-499.22319643      3.85      ]      [2.17962768e+03
1.19478031e+00] [-10000.      0.]      [0.86755102 5.      ]
3      14      [-999.2475051      3.8      ]      [3.00025083e+03
1.98997487e+00] [-1.e+04 2.e+00]      [ 0.86755102 10.      ]
4      9      [-499.18929592      3.65      ]      [2.17963546e+03
1.31434394e+00] [-1.e+04 2.e+00]      [0.86755102 7.      ]
5      15      [-2499.35330102      4.35      ]      [4.33050039e+03
1.65151446e+00] [-1.e+04 2.e+00]      [0.86755102 8.      ]
Selecting features with genetic algorithm.
gen      nevals  avg      std      min
      max
0      20      [0.6978699 3.1      ]      [0.06320138 1.60934769]
      [0.63882653 1.      ]      [0.85714286 5.      ]
1      16      [-1999.38445408      4.15      ]      [4.00030777e+03
1.62095651e+00] [-1.e+04 1.e+00]      [0.85714286 8.      ]
2      18      [-499.24279592      2.95      ]      [2.17962319e+03
1.53215534e+00] [-1.e+04 1.e+00]      [0.85719388 6.      ]
3      10      [-499.20873469      2.55      ]      [2.17963100e+03
1.20312094e+00] [-1.e+04 1.e+00]      [0.85719388 6.      ]
4      11      [-499.18578571      2.6      ]      [2.17963627e+03
1.24096736e+00] [-1.e+04 1.e+00]      [0.85719388 6.      ]
5      14      [0.84771429 2.95      ]      [0.04116857 0.73993243]
      [0.66826531 1.      ]      [0.85719388 5.      ]
Selecting features with genetic algorithm.
gen      nevals  avg      std
      min      max
0      20      [0.70148724 3.3      ]      [0.06987767 1.41774469]
      [0.63892857 1.      ]      [0.8577551 5.      ]
1      12      [-999.34462245      3.2      ]      [3.00021846e+03 1.43527001e+00]
      [-1.e+04 1.e+00]      [0.8577551 7.      ]
2      12      [-499.23148724      3.5      ]      [2.17962578e+03 1.02469508e+00]
      [-1.e+04 2.e+00]      [0.8577551 7.      ]
3      9      [-999.25273469      3.5      ]      [3.00024909e+03 1.32287566e+00]
      [-1.e+04 1.e+00]      [0.8577551 6.      ]
4      7      [-999.23294898      3.35      ]      [3.00025568e+03 1.71099386e+00]
      [-1.e+04 1.e+00]      [0.8577551 8.      ]
5      9      [-999.23874235      3.05      ]      [3.00025375e+03 1.71682847e+00]
      [-1.e+04 1.e+00]      [0.8577551 7.      ]
6      10      [0.85774745 1.4      ]      [3.33589205e-05 9.16515139e-01]
      [0.85760204 1.      ]      [0.8577551 4.      ]
Selecting features with genetic algorithm.
gen      nevals  avg      std
      min      max
0      20      [0.67586224 3.1      ]      [0.04192175 1.4106736 ]
      [0.63632653 1.      ]      [0.77908163 5.      ]
1      15      [-2499.45156122      4.55      ]      [4.33044366e+03
1.82961745e+00] [-1.e+04 1.e+00]      [0.79484694 8.      ]
2      10      [-1499.37159184      4.25      ]      [3.57097820e+03
1.51244835e+00] [-1.e+04 2.e+00]      [0.79484694 8.      ]
3      8      [-999.30055357      4.65      ]      [3.00023315e+03
1.35185058e+00] [-1.e+04 4.e+00]      [ 0.79484694 10.      ]
4      9      [-1999.37945918      4.9      ]      [4.00031027e+03
1.37477271e+00] [-1.e+04 3.e+00]      [0.79484694 9.      ]

```


Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.69256633 3.25]	[0.07650905 1.37386317]
		[0.62964286 1.]	[0.85734694 5.]
1	11	[-1999.40114796 4.6]	[4.00029943e+03]
1.35646600e+00]		[-1.e+04 2.e+00]	[0.87908163 7.]
2	8	[-1499.29797704 5.05]	[3.57100912e+03]
1.24398553e+00]		[-1.e+04 2.e+00]	[0.87908163 8.]
3	12	[-1499.26871173 5.]	[3.57102142e+03]
1.04880885e+00]		[-1.e+04 2.e+00]	[0.87908163 8.]
4	6	[-1499.27110714 4.45]	[3.57102041e+03]
1.35922772e+00]		[-1.e+04 2.e+00]	[0.87908163 7.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.68978571 2.45]	[0.07268648 1.4309088]
		[0.63964286 1.]	[0.85744898 5.]
1	11	[-999.29629337 3.35]	[3.00023457e+03 1.79652442e+00]
		[-1.e+04 1.e+00]	[0.85770408 7.]
2	12	[0.81190051 3.1]	[0.07485565 1.54596248]
		[0.63091837 1.]	[0.85770408 5.]
3	9	[-499.18601786 2.95]	[2.17963621e+03 1.65755845e+00]
		[-1.e+04 1.e+00]	[0.85770408 7.]
4	17	[-499.18464286 2.25]	[2.17963653e+03 1.69926455e+00]
		[-1.e+04 1.e+00]	[0.87163265 9.]
5	5	[-499.18384439 2.25]	[2.17963671e+03 1.13468057e+00]
		[-1.e+04 1.e+00]	[0.87163265 7.]
6	13	[0.85694133 2.05]	[0.01384065 0.38405729]
		[0.80066327 1.]	[0.87188776 3.]
7	11	[-499.18642092 2.8]	[2.17963612e+03 1.28840987e+00]
		[-1.e+04 1.e+00]	[0.87188776 6.]
8	17	[0.84615816 3.]	[0.06760907 0.83666003]
		[0.63959184 2.]	[0.87188776 5.]
9	12	[-1999.3032551 3.75]	[4.00034837e+03 1.37386317e+00]
		[-1.e+04 2.e+00]	[0.87188776 7.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.67910459 3.1]	[0.097814 1.33790882]
		[0.36056122 1.]	[0.81336735 5.]
1	14	[-2499.43920918 4.45]	[4.33045079e+03]
2.13248681e+00]		[-1.e+04 1.e+00]	[0.81408163 10.]
2	10	[-999.2847449 3.75]	[3.00023842e+03]
1.33697420e+00]		[-1.e+04 1.e+00]	[0.82586735 7.]
3	9	[-1499.30582398 4.55]	[3.57100583e+03]
1.43090880e+00]		[-1.e+04 1.e+00]	[0.82586735 8.]
4	11	[-1999.3433852 5.1]	[4.00032831e+03]
1.22065556e+00]		[-1.e+04 3.e+00]	[0.82586735 8.]
5	6	[-1499.29908929 5.3]	[3.57100866e+03]
7.81024968e-01]		[-1.e+04 5.e+00]	[0.82586735 8.]

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.67472194 3.05]	[0.0383373 1.59608897]
		[0.63969388 1.]	[0.75989796 5.]

```

1      11      [-999.37348214      4.15      ] [3.00020884e+03 1.76847392e+00]
      [-1.e+04  1.e+00] [0.75989796 9.      ]
2      9      [-999.3482449      4.1      ] [3.00021725e+03 1.37477271e+00]
      [-1.e+04  1.e+00] [0.79709184 7.      ]
3      11      [-2499.43970408      4.7      ] [4.33045051e+03
1.64620776e+00] [-1.e+04  1.e+00] [0.79709184 8.      ]
4      11      [-1999.398125      4.55      ] [4.00030094e+03
1.71682847e+00] [-1.e+04  1.e+00] [0.79709184 9.      ]
5      11      [-1499.35406888      4.35      ] [3.57098556e+03
1.55804365e+00] [-1.e+04  1.e+00] [0.79709184 8.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.68810459 3.25      ] [0.06719259 1.51244835]
      [0.62780612 1.      ] [0.84887755 5.      ]
1      11      [-1499.39329592      4.      ] [3.57096908e+03
1.67332005e+00] [-1.e+04  1.e+00] [0.84887755 8.      ]
2      8      [-999.30639031      3.45      ] [3.00023120e+03
1.80208213e+00] [-10000.      0.] [0.85765306 7.      ]
3      12      [-1499.32841071      3.8      ] [3.57099634e+03
1.83303028e+00] [-1.e+04  1.e+00] [0.8577551 7.      ]
4      15      [-1499.28669133      3.2      ] [3.57101386e+03
1.88679623e+00] [-1.e+04  1.e+00] [0.8577551 7.      ]
5      14      [0.85630357 2.35      ] [0.00477024 1.01365675]
      [0.83627551 1.      ] [0.85811224 5.      ]
6      6      [-499.18873724      2.6      ] [2.17963559e+03
1.20000000e+00] [-1.e+04  1.e+00] [0.85811224 6.      ]
7      9      [-499.1894898      2.85      ] [2.17963542e+03
9.09670270e-01] [-1.e+04  2.e+00] [0.85811224 6.      ]
8      10      [-999.23862245      3.45      ] [3.00025379e+03
1.07121426e+00] [-1.e+04  2.e+00] [0.85836735 6.      ]
9      9      [-499.20658418      3.95      ] [2.17963149e+03
1.02347447e+00] [-1.e+04  3.e+00] [0.85836735 6.      ]
10     12      [-1999.324375      4.75      ] [4.00033781e+03
1.29903811e+00] [-1.e+04  3.e+00] [0.85836735 7.      ]
11     5      [-499.18476531      4.15      ] [2.17963650e+03
1.06183803e+00] [-1.e+04  2.e+00] [0.85836735 6.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.68692092 2.55      ] [0.07682955 1.53215534]
      [0.63127551 1.      ] [0.86913265 5.      ]
1      14      [-499.30203571      2.9      ] [2.1796096e+03 1.3000000e+00]
      [-1.e+04  1.e+00] [0.87040816 6.      ]
2      9      [0.79272194 2.9      ] [0.09339732 1.17898261]
      [0.63969388 1.      ] [0.87040816 5.      ]
3      15      [0.85056633 3.15      ] [0.03994073 1.10792599]
      [0.68454082 1.      ] [0.87040816 5.      ]
4      12      [-999.22594388      3.35      ] [3.00025802e+03 1.23592071e+00]
      [-1.e+04  1.e+00] [0.87040816 7.      ]

```

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.66581122 3.45      ] [0.07583591 1.35922772]
      [0.41459184 1.      ] [0.81122449 5.      ]
1      10      [-999.34596939      3.6      ] [3.00021801e+03 2.03469899e+00]
      [-1.e+04  1.e+00] [0.81122449 8.      ]

```

```

2      10      [-499.27422959      3.35      ] [2.17961598e+03 1.82414363e+00]
      [-1.e+04  1.e+00]      [0.81841837 6.      ]
3      15      [-999.28440816      3.15      ] [3.00023853e+03 1.55804365e+00]
      [-1.e+04  1.e+00]      [0.81841837 6.      ]
4      10      [-499.23423214      3.4      ] [2.17962515e+03 1.35646600e+00]
      [-1.e+04  2.e+00]      [0.82066327 7.      ]
5      11      [-499.2231199      3.9      ] [2.17962770e+03 1.09087121e+00]
      [-1.e+04  2.e+00]      [0.82658163 7.      ]
6      11      [0.82009694 4.05      ] [0.00329585 0.66895441]
      [0.8180102 3.      ] [0.82658163 5.      ]
7      9      [-999.26066071      4.65      ] [3.00024645e+03 8.52936105e-01]
      [-1.e+04  3.e+00]      [0.82795918 7.      ]
8      6      [-1499.29740051      5.2      ] [3.57100937e+03
7.48331477e-01] [-1.e+04  4.e+00]      [0.82795918 8.      ]
9      13      [-2499.37841327      5.2      ] [4.33048589e+03
6.78232998e-01] [-1.e+04  4.e+00]      [0.8369898 7.      ]
10     15      [-1499.29398469      5.15      ] [3.57101080e+03
1.45859521e+00] [-1.e+04  4.e+00]      [ 0.8369898 11.      ]
11     12      [-999.25036224      4.6      ] [3.00024988e+03
8.00000000e-01] [-1.e+04  4.e+00]      [0.8369898 7.      ]
12     9      [-499.20633673      4.35      ] [2.17963155e+03
7.26291952e-01] [-1.e+04  4.e+00]      [0.8369898 7.      ]

```

Accuracy: 0.86 (+/- 0.03) [Genetic Algorithm]

```

0.0 0.0
0.0 0.0
1.0 1.0
1.0 1.0
1.0 1.0
1.0 1.0
1.0 0.0
1.0 1.0
0.0 0.0
1.0 1.0
0.0 0.0
1.0 1.0
1.0 1.0
0.0 0.0
1.0 1.0
1.0 1.0
1.0 1.0
1.0 1.0
1.0 1.0
1.0 1.0
0.0 0.0
1.0 0.0
1.0 1.0
1.0 1.0
1.0 1.0
0.0 0.0
1.0 1.0
0.0 0.0
1.0 1.0
1.0 1.0
0.0 0.0
1.0 1.0
0.0 0.0

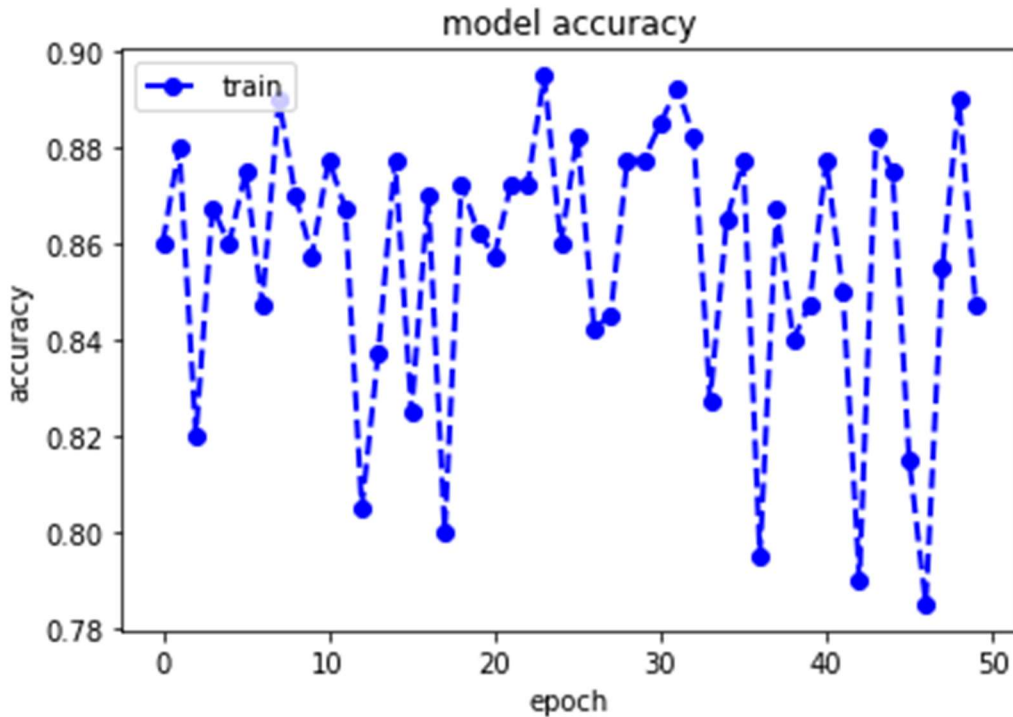
```

0.0	0.0
1.0	1.0
1.0	1.0
0.0	1.0
0.0	0.0
1.0	1.0
1.0	1.0
0.0	0.0
0.0	0.0
1.0	1.0
0.0	0.0
0.0	0.0
0.0	0.0
0.0	1.0
0.0	0.0
0.0	0.0
0.0	0.0
1.0	1.0
1.0	0.0
1.0	1.0
1.0	1.0
1.0	1.0
0.0	0.0
1.0	1.0
1.0	0.0
0.0	0.0
0.0	0.0
1.0	1.0
0.0	1.0
1.0	1.0
0.0	0.0
0.0	1.0
1.0	0.0
0.0	0.0
1.0	0.0
1.0	1.0
1.0	1.0
0.0	1.0
1.0	1.0
0.0	0.0
1.0	0.0
0.0	0.0
1.0	1.0
1.0	1.0
0.0	1.0
0.0	0.0
0.0	1.0
1.0	0.0
1.0	1.0
1.0	1.0
1.0	1.0
0.0	0.0
1.0	1.0
1.0	1.0
1.0	1.0
1.0	1.0

```

1.0 1.0
1.0 1.0
1.0 1.0
1.0 1.0
0.0 0.0
1.0 1.0
1.0 1.0
0.0 1.0
0.0 0.0

```



```

correct: 84
wrong: 16
Iteration 1, loss = inf
Validation score: 0.779000
Iteration 2, loss = inf
Validation score: 0.746500
Iteration 3, loss = inf
Validation score: 0.792500
Iteration 4, loss = inf
Validation score: 0.788000
Iteration 5, loss = inf
Validation score: 0.731500
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.
Selecting features with genetic algorithm.
gen      nevals  avg                                std                                min
max
0         20      [0.6732925 2.45          ] [0.07081958 1.16081868] [0.55535
1.         ] [0.8576 5.          ]
1         15      [-1499.3692025      3.4          ] [3.57097920e+03 1.56204994e+00]
[-1.e+04  1.e+00] [0.8576 7.          ]
2          8      [-999.3049275      3.5          ] [3.00023169e+03 1.53297097e+00]
[-1.e+04  1.e+00] [0.8576 7.          ]

```

3	10	[-499.2043625 2.95]	[2.17963200e+03 1.16081868e+00]
		[-1.e+04 1.e+00] [0.8576 6.]	
4	15	[0.8388325 2.35]	[0.05148841 1.10792599]
		[0.67705 1.] [0.8576 5.]	
5	10	[0.84375 2.35]	[0.04430917 1.23592071]
		[0.6691 1.] [0.85785 5.]	
6	13	[-499.19831 2.1]	[2.17963339e+03 1.51327460e+00]
		[-1.e+04 1.e+00] [0.85795 7.]	
7	9	[-499.1961275 2.]	[2.17963389e+03 1.34164079e+00]
		[-1.e+04 1.e+00] [0.85795 6.]	
8	12	[0.8556 2.15]	[0.01035826 1.15217186]
		[0.81365 1.] [0.87015 5.]	
9	8	[0.8597725 2.5]	[0.00435949 0.80622577]
		[0.85785 2.] [0.87015 4.]	
10	9	[-999.228345 3.5]	[3.00025722e+03 1.20415946e+00]
		[-1.e+04 2.e+00] [0.87015 6.]	
11	10	[0.86893 3.95]	[0.00366 0.21794495]
		[0.85795 3.] [0.87015 4.]	

Iteration 1, loss = inf

Validation score: 0.773980

Iteration 2, loss = inf

Validation score: 0.730612

Iteration 3, loss = inf

Validation score: 0.797449

Iteration 4, loss = inf

Validation score: 0.391837

Iteration 5, loss = inf

Validation score: 0.389796

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.71215816 3.9]	[0.07385645 1.13578167]
		[0.63964286 2.]	[0.85826531 5.]
1	7	[-999.30279847 4.]	[3.00023240e+03 1.22474487e+00]
		[-1.e+04 2.e+00] [0.85826531 6.]	
2	8	[-1499.32784439 3.65]	[3.57099658e+03
1.58981131e+00]		[-1.e+04 2.e+00]	[0.85826531 8.]
3	13	[0.82985714 2.65]	[0.06509128 0.90967027]
		[0.63964286 1.]	[0.85831633 5.]
4	10	[0.85126531 2.95]	[0.02722681 0.92059763]
		[0.73331633 2.]	[0.85892857 5.]
5	7	[-499.20847194 3.35]	[2.17963106e+03
1.49248116e+00]		[-1.e+04 2.e+00]	[0.85892857 8.]
6	5	[0.85841327 3.3]	[2.6209795e-04
1.1000000e+00]		[0.8577551 2.]	[0.85892857 5.]
7	12	[-999.22725255 4.4]	[3.00025758e+03
1.20000000e+00]		[-1.e+04 2.e+00]	[0.85892857 7.]

Iteration 1, loss = inf

Validation score: 0.746429

Iteration 2, loss = inf

Validation score: 0.738265

Iteration 3, loss = inf

Validation score: 0.736224

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg		std
	min		max	
0	20	[0.67020408 2.75]		[0.06608823 1.1779219]
		[0.60933673 1.]		[0.86959184 5.]
1	13	[-499.3376148 3.4]		[2.17960143e+03 1.46287388e+00]
		[-1.e+04 1.e+00]		[0.87056122 6.]
2	7	[-499.28629592 4.3]		[2.17961321e+03 1.18743421e+00]
		[-1.e+04 1.e+00]		[0.87056122 6.]
3	14	[-999.28145153 4.6]		[3.00023952e+03 9.69535971e-01]
		[-1.e+04 2.e+00]		[0.87091837 6.]
4	8	[-999.25368622 4.7]		[3.00024877e+03 7.14142843e-01]
		[-1.e+04 3.e+00]		[0.87096939 6.]
5	12	[-2499.3650051 4.85]		[4.33049363e+03 2.00686322e+00]
		[-1.e+04 2.e+00]		[0.87147959 11.]
6	7	[-1499.2622551 4.1]		[3.57102413e+03 1.51327460e+00]
		[-1.e+04 2.e+00]		[0.87147959 8.]
7	11	[-999.21703316 4.15]		[3.00026099e+03 1.19478031e+00]
		[-1.e+04 3.e+00]		[0.87183673 8.]
8	10	[-499.17507653 4.2]		[2.17963872e+03 1.02956301e+00]
		[-1.e+04 3.e+00]		[0.87183673 7.]
9	12	[-499.17490816 4.05]		[2.17963876e+03 1.02347447e+00]
		[-1.e+04 2.e+00]		[0.87183673 6.]
10	10	[-499.18140306 4.45]		[2.17963727e+03 1.07121426e+00]
		[-1.e+04 3.e+00]		[0.87183673 7.]

Iteration 1, loss = inf

Validation score: 0.361735

Iteration 2, loss = inf

Validation score: 0.738265

Iteration 3, loss = inf

Validation score: 0.624490

Iteration 4, loss = inf

Validation score: 0.800000

Iteration 5, loss = inf

Validation score: 0.770408

Iteration 6, loss = inf

Validation score: 0.808163

Iteration 7, loss = inf

Validation score: 0.779082

Iteration 8, loss = inf

Validation score: 0.741837

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg		std
	min		max	
0	20	[0.67127551 2.75]		[0.04048389 1.44481833]
		[0.63959184 1.]		[0.78010204 5.]
1	11	[-1499.4143699 3.55]		[3.57096023e+03 1.53215534e+00]
		[-1.e+04 2.e+00]		[0.78010204 7.]
2	9	[-999.36354337 3.4]		[3.00021215e+03 1.31909060e+00]
		[-1.e+04 2.e+00]		[0.80137755 6.]
3	14	[-499.30395918 4.1]		[2.17960916e+03 1.22065556e+00]
		[-1.e+04 2.e+00]		[0.8327551 7.]
4	13	[-1499.34322704 4.15]		[3.57099011e+03 1.15217186e+00]
		[-1.e+04 3.e+00]		[0.8327551 6.]

```

5      11      [-499.2523801    3.45      ]      [2.17962099e+03
1.24398553e+00] [-1.e+04  2.e+00]      [0.8327551 8.      ]
6      14      [-499.22992602    3.75      ]      [2.17962614e+03
1.66958079e+00] [-1.e+04  2.e+00]      [ 0.83367347 10.      ]
7      11      [-499.21462245    3.4      ]      [2.17962965e+03
9.16515139e-01] [-1.e+04  2.e+00]      [0.83367347 6.      ]
8      10      [0.83107398 3.25      ]      [0.00717093 0.698212  ]
      [0.80040816 2.      ]      [0.83367347 5.      ]
9      10      [-999.25042602    3.65      ]      [3.00024986e+03
1.10792599e+00] [-1.e+04  2.e+00]      [0.83367347 6.      ]

```

Iteration 1, loss = inf

Validation score: 0.771429

Iteration 2, loss = inf

Validation score: 0.403571

Iteration 3, loss = inf

Validation score: 0.402551

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std	min
0	20	[0.6882398 3.5]	[0.06732634 1.24498996]	
		[0.60571429 1.]	[0.85632653 5.]	
1	6	[-499.28320408 3.6]	[2.17961392e+03 9.69535971e-01]	
		[-1.e+04 2.e+00]	[0.85632653 6.]	
2	11	[-1499.32331122 3.9]	[3.57099848e+03	
		[-1.e+04 2.e+00]	[0.8572449 7.]	
3	6	[-999.26181633 3.6]	[3.00024606e+03	
		[-1.e+04 1.e+00]	[0.8572449 7.]	
4	14	[-499.19244898 3.8]	[2.17963474e+03	
		[-1.e+04 2.e+00]	[0.8572449 9.]	
5	14	[-499.18519898 4.]	[2.17963640e+03	
		[-1.e+04 2.e+00]	[0.87122449 7.]	
6	9	[-999.22465816 4.35]	[3.00025845e+03	
		[-1.e+04 2.e+00]	[0.87122449 7.]	
7	9	[-1499.26231888 4.75]	[3.57102410e+03	
		[-1.e+04 2.e+00]	[0.87163265 9.]	
8	12	[-1499.25936735 4.95]	[3.57102534e+03	
		[-1.e+04 3.e+00]	[0.87163265 8.]	
9	16	[-999.21573214 4.35]	[3.00026142e+03	
		[-1.e+04 3.e+00]	[0.87163265 6.]	
10	14	[-499.18284949 3.9]	[2.17963694e+03	
		[-1.e+04 3.e+00]	[0.87163265 6.]	

Iteration 1, loss = inf

Validation score: 0.715816

Iteration 2, loss = inf

Validation score: 0.778571

Iteration 3, loss = inf

Validation score: 0.766837

Iteration 4, loss = inf

Validation score: 0.761735

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	


```

0      20      [0.68435969 3.25      ]      [0.06077785 1.51244835]
      [0.585 1.      ] [0.85755102 5.      ]
1      8      [-999.30241837 3.4      ] [3.00023253e+03 1.46287388e+00]
      [-1.e+04 1.e+00] [0.85755102 7.      ]
2      13      [0.80477296 2.35      ] [0.08265541 1.19478031]
      [0.6444898 1.      ] [0.85755102 5.      ]
3      9      [-499.20826786 1.85      ] [2.17963111e+03 1.31434394e+00]
      [-1.e+04 1.e+00] [0.85755102 7.      ]
4      12      [-499.19204847 2.05      ] [2.17963483e+03 1.49916644e+00]
      [-1.e+04 1.e+00] [0.85790816 7.      ]
5      10      [0.85762245 1.45      ] [1.42857143e-04 8.04673847e-01]
      [0.85755102 1.      ] [0.85790816 3.      ]
6      13      [-499.19980102 2.85      ] [2.17963305e+03 1.27573508e+00]
      [-1.e+04 1.e+00] [0.87020408 6.      ]
7      7      [-499.1923699 2.75      ] [2.17963476e+03 1.25996032e+00]
      [-1.e+04 1.e+00] [0.87020408 6.      ]
8      9      [-499.18396684 2.95      ] [2.17963668e+03 1.20312094e+00]
      [-1.e+04 2.e+00] [0.87020408 7.      ]
9      7      [0.84265306 3.25      ] [0.10587192 0.8291562 ]
      [0.38173469 2.      ] [0.87020408 5.      ]

```

Iteration 1, loss = inf

Validation score: 0.378061

Iteration 2, loss = inf

Validation score: 0.777551

Iteration 3, loss = inf

Validation score: 0.728571

Iteration 4, loss = inf

Validation score: 0.742857

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.68662245 3.55      ] [0.06386759 1.32193041]
      [0.58887755 1.      ] [0.8569898 5.      ]
1      13      [-1499.37444643 3.65      ] [3.57097700e+03
1.68151717e+00] [-10000.      0.] [0.85729592 7.      ]
2      15      [-1999.37668878 4.15      ] [4.00031166e+03
1.42390309e+00] [-1.e+04 1.e+00] [0.85729592 7.      ]
3      9      [-999.2401352 3.25      ] [3.00025329e+03
1.66958079e+00] [-1.e+04 1.e+00] [0.85729592 7.      ]
4      15      [-499.20972704 2.6      ] [2.17963077e+03
1.62480768e+00] [-1.e+04 1.e+00] [0.85729592 7.      ]
5      15      [0.8572449 1.8      ] [1.04560722e-04
7.48331477e-01] [0.85693878 1.      ] [0.85729592 3.      ]

```

Iteration 1, loss = inf

Validation score: 0.723980

Iteration 2, loss = inf

Validation score: 0.775510

Iteration 3, loss = inf

Validation score: 0.761224

Iteration 4, loss = inf

Validation score: 0.791327

Iteration 5, loss = inf

Validation score: 0.794898

Iteration 6, loss = inf

Validation score: 0.740816

Iteration 7, loss = inf
 Validation score: 0.760714
 Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.66840306 2.55]	[0.04405944 1.62711401]
		[0.62928571 1.]	[0.81209184 5.]
1	13	[-499.30584949 2.85]	[2.17960872e+03 1.52561463e+00]
		[-10000. 0.]	[0.81209184 5.]
2	11	[0.79164031 2.7]	[0.04656861 1.1]
		[0.6525 2.]	[0.81484694 5.]
3	14	[-1499.30909439 3.1]	[3.57100445e+03]
		[1.51327460e+00 [-1.e+04 2.e+00]	[0.81806122 7.]
4	15	[-999.26603316 3.7]	[3.00024466e+03]
		[1.34536240e+00 [-1.e+04 2.e+00]	[0.82056122 8.]
5	11	[-2499.38726531 4.25]	[4.33048078e+03]
		[1.63935963e+00 [-1.e+04 2.e+00]	[0.82056122 8.]
6	17	[0.81751786 3.45]	[0.00291443 0.73993243]
		[0.81204082 2.]	[0.82096939 5.]
7	11	[-999.26212755 4.35]	[3.00024596e+03]
		[1.27573508e+00 [-1.e+04 3.e+00]	[0.82464286 7.]
8	13	[-1999.34377296 5.55]	[4.00032811e+03]
		[1.56444878e+00 [-1.e+04 4.e+00]	[0.82464286 10.]
9	11	[-2499.39307908 5.4]	[4.33047743e+03]
		[1.15758369e+00 [-1.e+04 4.e+00]	[0.82464286 9.]
10	14	[-3999.50678571 5.85]	[4.89938219e+03]
		[1.52561463e+00 [-1.e+04 4.e+00]	[0.82464286 10.]

Iteration 1, loss = inf

Validation score: 0.736735

Iteration 2, loss = inf

Validation score: 0.390306

Iteration 3, loss = inf

Validation score: 0.710204

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.67506888 2.9]	[0.05039415 1.3]
		[0.62096939 1.]	[0.84612245 5.]
1	10	[-2499.46623214 4.25]	[4.33043519e+03]
		[1.66958079e+00 [-1.e+04 1.e+00]	[0.84612245 7.]
2	11	[-1499.38151786 4.]	[3.57097403e+03]
		[1.51657509e+00 [-1.e+04 1.e+00]	[0.84612245 7.]
3	11	[-1499.34204337 4.45]	[3.57099061e+03]
		[1.20312094e+00 [-1.e+04 2.e+00]	[0.84867347 7.]
4	12	[-999.27152296 4.35]	[3.00024283e+03]
		[9.09670270e-01 [-1.e+04 2.e+00]	[0.84867347 6.]
5	9	[0.83915816 4.3]	[0.01559639 0.55677644]
		[0.80331633 3.]	[0.84867347 5.]
6	9	[-999.23830612 4.45]	[3.00025390e+03]
		[6.68954408e-01 [-1.e+04 4.e+00]	[0.84867347 6.]

Iteration 1, loss = inf

Validation score: 0.708673

Iteration 2, loss = inf

Validation score: 0.754082
 Iteration 3, loss = inf
 Validation score: 0.751531
 Iteration 4, loss = inf
 Validation score: 0.739796
 Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.69283163 2.95]	[0.05889919 1.24398553]
		[0.63811224 1.]	[0.83045918 5.]
1	14	[-999.37516837 3.65]	[3.00020828e+03 1.52561463e+00]
		[-1.e+04 2.e+00]	[0.83045918 7.]
2	15	[-499.27458673 4.1]	[2.17961589e+03 9.94987437e-01]
		[-1.e+04 2.e+00]	[0.83739796 6.]
3	9	[-1999.35288776 4.5]	[4.00032356e+03]
		[9.74679434e-01] [-1.e+04 3.e+00]	[0.83739796 6.]
4	10	[-999.26754592 4.45]	[3.00024415e+03]
		[8.04673847e-01] [-1.e+04 3.e+00]	[0.83739796 6.]
5	13	[-999.25044898 4.85]	[3.00024985e+03]
		[9.09670270e-01] [-1.e+04 3.e+00]	[0.83739796 7.]

Iteration 1, loss = inf
 Validation score: 0.779082
 Iteration 2, loss = inf
 Validation score: 0.743878
 Iteration 3, loss = inf
 Validation score: 0.788776
 Iteration 4, loss = inf
 Validation score: 0.746939
 Iteration 5, loss = inf
 Validation score: 0.771939
 Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std	min
			max	
0	20	[0.6813801 2.5]	[0.06206467 1.396424]	
		[0.63954082 1.]	[0.81096939 5.]	
1	13	[-2499.43332143 3.95]	[4.33045419e+03]	
		[1.56444878e+00] [-10000. 0.]	[0.81117347 7.]	
2	7	[-1499.32008929 3.95]	[3.57099983e+03]	
		[1.07121426e+00] [-1.e+04 3.e+00]	[0.82954082 6.]	
3	11	[-499.22671429 3.7]	[2.17962688e+03]	
		[9.00000000e-01] [-1.e+04 2.e+00]	[0.82954082 6.]	
4	11	[0.82075255 3.55]	[0.00882379 0.86458082]	
		[0.81096939 2.]	[0.82954082 5.]	
5	7	[-499.21411224 3.35]	[2.17962977e+03]	
		[7.92148976e-01] [-1.e+04 3.e+00]	[0.82954082 6.]	

Iteration 1, loss = inf
 Validation score: 0.776020
 Iteration 2, loss = inf
 Validation score: 0.761735
 Iteration 3, loss = inf
 Validation score: 0.766327
 Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.68573469 2.55]	[0.06080123 1.35922772]
		[0.63959184 1.]	[0.85719388 5.]
1	12	[-999.36564031 3.25]	[3.00021145e+03 1.40978722e+00]
		[-1.e+04 1.e+00]	[0.85719388 6.]
2	11	[-499.28367857 3.25]	[2.17961381e+03 1.29903811e+00]
		[-1.e+04 1.e+00]	[0.85719388 7.]
3	10	[-499.26194388 3.6]	[2.17961879e+03 1.28062485e+00]
		[-1.e+04 1.e+00]	[0.85719388 6.]

Iteration 1, loss = inf

Validation score: 0.723980

Iteration 2, loss = inf

Validation score: 0.719898

Iteration 3, loss = inf

Validation score: 0.790306

Iteration 4, loss = inf

Validation score: 0.794388

Iteration 5, loss = inf

Validation score: 0.754592

Iteration 6, loss = inf

Validation score: 0.741327

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.68064796 3.1]	[0.066624 1.22065556]
		[0.63795918 1.]	[0.85760204 5.]
1	11	[0.75192092 3.1]	[0.08250919 1.04403065]
		[0.64015306 2.]	[0.85760204 5.]
2	10	[-499.20894643 3.4]	[2.17963095e+03 1.24096736e+00]
		[-1.e+04 2.e+00]	[0.85760204 7.]
3	11	[-1999.32808673 3.95]	[4.00033596e+03
		1.46543509e+00] [-1.e+04 2.e+00]	[0.87158163 7.]
4	8	[-499.18837755 3.6]	[2.17963567e+03
		9.16515139e-01] [-1.e+04 2.e+00]	[0.87158163 6.]
5	12	[-499.18039031 3.5]	[2.17963750e+03
		8.66025404e-01] [-1.e+04 2.e+00]	[0.87158163 6.]
6	16	[-999.22854847 4.]	[3.00025715e+03
		1.18321596e+00] [-1.e+04 2.e+00]	[0.87193878 7.]
7	9	[-999.22701276 4.6]	[3.00025766e+03
		1.15758369e+00] [-1.e+04 4.e+00]	[0.87193878 9.]
8	7	[-1999.3026352 4.9]	[4.00034868e+03
		9.94987437e-01] [-1.e+04 3.e+00]	[0.87193878 7.]
9	9	[-2999.38966837 5.3]	[4.58297525e+03
		1.26885775e+00] [-1.e+04 2.e+00]	[0.87193878 8.]
10	11	[-2999.39962245 5.]	[4.58296873e+03
		1.18321596e+00] [-1.e+04 3.e+00]	[0.87193878 8.]
11	13	[-499.19154337 4.15]	[2.17963495e+03
		7.26291952e-01] [-1.e+04 3.e+00]	[0.8719898 6.]
12	10	[-999.22617602 4.2]	[3.00025794e+03
		1.16619038e+00] [-1.e+04 2.e+00]	[0.8719898 7.]
13	12	[-999.21530102 3.9]	[3.00026157e+03
		8.88819442e-01] [-1.e+04 3.e+00]	[0.8719898 6.]

```

14      8      [0.86291327 3.4      ]      [0.03928332 0.58309519]
      [0.69168367 3.      ]      [0.8719898 5.      ]

```

Iteration 1, loss = inf

Validation score: 0.753571

Iteration 2, loss = inf

Validation score: 0.802041

Iteration 3, loss = inf

Validation score: 0.743878

Iteration 4, loss = inf

Validation score: 0.746429

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.70655357 3.3]	[0.08632927 1.18743421]
		[0.63117347 2.]	[0.8694898 5.]
1	12	[-999.31246173 3.45]	[3.00022918e+03 1.49916644e+00]
		[-1.e+04 2.e+00]	[0.8694898 8.]
2	9	[-499.19361224 3.75]	[2.17963447e+03 9.42072184e-01]
		[-1.e+04 2.e+00]	[0.86964286 7.]
3	12	[-499.17458418 3.9]	[2.17963884e+03 9.43398113e-01]
		[-1.e+04 2.e+00]	[0.8697449 6.]
4	8	[0.86247449 3.65]	[0.03094201 0.72629195]
		[0.72760204 2.]	[0.8697449 5.]
5	15	[-1999.31351531 4.5]	[4.00034324e+03
		1.16189500e+00]	[-1.e+04 2.e+00]
6	15	[-999.21916327 4.3]	[3.00026028e+03
		1.45258390e+00]	[-1.e+04 2.e+00]
7	11	[-1499.27046173 4.15]	[3.57102068e+03
		1.31434394e+00]	[-1.e+04 2.e+00]
8	9	[-999.21898724 4.2]	[3.00026034e+03
		1.28840987e+00]	[-1.e+04 2.e+00]
9	13	[-499.17311224 4.1]	[2.17963917e+03
		8.88819442e-01]	[-1.e+04 2.e+00]
10	16	[-1499.26426276 4.65]	[3.57102329e+03
		1.71099386e+00]	[-1.e+04 3.e+00]

Iteration 1, loss = inf

Validation score: 0.766837

Iteration 2, loss = inf

Validation score: 0.728571

Iteration 3, loss = inf

Validation score: 0.721429

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.70704847 2.4]	[0.06539002 1.24096736]
		[0.61428571 1.]	[0.81188776 5.]
1	9	[-499.27108163 2.7]	[2.17961670e+03 1.30766968e+00]
		[-1.e+04 1.e+00]	[0.81239796 6.]
2	11	[0.81190051 2.3]	[1.75909459e-04 1.00498756e+00]
		[0.81153061 1.]	[0.81239796 5.]
3	15	[-999.27583163 2.9]	[3.00024139e+03 1.57797338e+00]
		[-1.e+04 1.e+00]	[0.81872449 6.]

4	9	[-1499.32252551	3.65	]	[3.57099881e+03
1.52561463e+00]		[-1.e+04 2.e+00]			[0.81872449 7.]
5	16	[0.81142602 3.4		]	[0.01100503 0.96953597]
		[0.78117347 2.]			[0.81872449 5.]
6	13	[-999.26828571	3.2	]	[3.0002439e+03
1.4000000e+00]		[-1.e+04 2.e+00]			[0.81872449 6.]
7	14	[-499.22301276	2.75	]	[2.17962772e+03
1.17792190e+00]		[-1.e+04 2.e+00]			[0.82836735 6.]
8	13	[-499.22056633	3.25	]	[2.17962829e+03
1.47901995e+00]		[-1.e+04 2.e+00]			[0.8294898 8.]
9	13	[-999.2658648	4.25	]	[3.00024471e+03
1.47901995e+00]		[-1.e+04 2.e+00]			[0.83331633 8.]
10	16	[-1999.33615306	4.65	]	[4.00033192e+03
1.62095651e+00]		[-1.e+04 3.e+00]			[0.83331633 9.]
11	13	[0.82021173 3.65		]	[0.04303185 0.79214898]
		[0.63964286 3.]			[0.83836735 5.]
12	9	[-1999.33234184	4.5	]	[4.00033383e+03
1.11803399e+00]		[-1.e+04 3.e+00]			[0.83872449 6.]
13	7	[-1999.33112755	5.	]	[4.00033444e+03
1.41421356e+00]		[-1.e+04 3.e+00]			[0.83872449 8.]
14	13	[-2999.41382653	5.5	]	[4.58295944e+03
1.39642400e+00]		[-1.e+04 4.e+00]			[0.83872449 9.]
15	11	[-2999.41348214	5.4	]	[4.58295966e+03
9.69535971e-01]		[-1.e+04 4.e+00]			[0.83872449 8.]

Iteration 1, loss = inf

Validation score: 0.418878

Iteration 2, loss = inf

Validation score: 0.779082

Iteration 3, loss = inf

Validation score: 0.600510

Iteration 4, loss = inf

Validation score: 0.756633

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.66808163 3.25]	[0.04597496 1.40978722]
		[0.5830102 1.]	[0.81147959 5.]
1	9	[-499.32392857 3.7]	[2.17960457e+03 1.38202750e+00]
		[-1.e+04 1.e+00]	[0.82270408 6.]
2	9	[-499.26869133 4.55]	[2.17961725e+03 8.64580823e-01]
		[-1.e+04 2.e+00]	[0.82270408 6.]
3	10	[-499.22842092 4.75]	[2.17962648e+03 8.87411967e-01]
		[-1.e+04 2.e+00]	[0.82270408 7.]
4	14	[-1499.30587245 5.1]	[3.57100581e+03
4.35889894e-01]		[-1.e+04 4.e+00]	[0.83336735 6.]
5	9	[-2999.42352551 5.75]	[4.58295309e+03
1.37386317e+00]		[-1.e+04 5.e+00]	[0.83336735 10.]
6	10	[-2999.43133163 5.35]	[4.58294798e+03
1.31434394e+00]		[-1.e+04 3.e+00]	[0.83336735 8.]
7	8	[-999.25422194 5.]	[3.00024859e+03
7.07106781e-01]		[-1.e+04 3.e+00]	[0.83336735 7.]

Iteration 1, loss = inf

Validation score: 0.720918

Iteration 2, loss = inf

Validation score: 0.781122

Iteration 3, loss = inf
 Validation score: 0.758163
 Iteration 4, loss = inf
 Validation score: 0.753571
 Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.70764541 2.7]	[0.09362401 1.3453624]
		[0.55647959 1.]	[0.85678571 5.]
1	10	[-999.29719388 4.05]	[3.00023427e+03 2.03654119e+00]
		[-1.e+04 2.e+00]	[0.85678571 11.]
2	12	[0.81067347 3.65]	[0.07200528 1.10792599]
		[0.64331633 2.]	[0.85734694 5.]
3	16	[-999.25894388 4.3]	[3.00024702e+03 1.70587221e+00]
		[-1.e+04 2.e+00]	[0.85734694 10.]
4	13	[0.836625 3.8]	[0.06092538 0.81240384]
		[0.63964286 3.]	[0.85734694 5.]
5	11	[0.84677296 3.7]	[0.04757942 0.84261498]
		[0.63964286 2.]	[0.86806122 5.]
6	12	[-499.18675 3.35]	[2.17963604e+03 9.09670270e-01]
		[-1.e+04 2.e+00]	[0.86806122 6.]
7	7	[0.86165051 3.6]	[0.0107516 0.86023253]
		[0.82132653 2.]	[0.87153061 5.]
8	8	[0.86945663 4.35]	[0.00194449 0.57227616]
		[0.86535714 3.]	[0.87173469 5.]
9	5	[-499.18267857 4.75]	[2.17963698e+03 5.36190265e-01]
		[-1.e+04 4.e+00]	[0.87173469 6.]
10	11	[-2499.346625 5.5]	[4.33050425e+03 1.53297097e+00]
		[-1.e+04 4.e+00]	[0.87173469 9.]
11	12	[0.86406122 4.5]	[0.0298408 0.5]
		[0.73413265 4.]	[0.87173469 5.]

Iteration 1, loss = inf
 Validation score: 0.712245
 Iteration 2, loss = inf
 Validation score: 0.713776
 Iteration 3, loss = inf
 Validation score: 0.767347
 Iteration 4, loss = inf
 Validation score: 0.787755
 Iteration 5, loss = inf
 Validation score: 0.757653
 Iteration 6, loss = inf
 Validation score: 0.802551
 Iteration 7, loss = inf
 Validation score: 0.377041
 Iteration 8, loss = inf
 Validation score: 0.728061
 Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.73243112 2.85]	[0.08888892 1.42390309]
		[0.63954082 1.]	[0.86581633 5.]

1	6	[-999.28275765	3.05	]	[3.00023908e+03	1.59608897e+00]
		[-1.e+04 1.e+00]			[0.86581633 7.]
2	12	[-999.25854847	3.05	]	[3.00024715e+03	1.53215534e+00]
		[-1.e+04 1.e+00]			[0.86581633 6.]
3	11	[0.85108673 3.2		]	[0.01680915 1.32664992]	
		[0.80602041 1.		]	[0.86918367 5.]
4	13	[-499.18311224	2.8	]	[2.17963688e+03	1.28840987e+00]
		[-1.e+04 1.e+00]			[0.87173469 6.]
5	17	[-499.19131122	2.85	]	[2.17963500e+03	1.31434394e+00]
		[-1.e+04 1.e+00]			[0.87637755 6.]
6	4	[-999.22048724	3.45	]	[3.00025984e+03	1.62711401e+00]
		[-1.e+04 1.e+00]			[0.87637755 7.]
7	9	[-499.17544388	3.95	]	[2.17963864e+03	1.71682847e+00]
		[-1.e+04 1.e+00]			[0.87637755 9.]
8	9	[-999.21658163	4.3	]	[3.00026114e+03	9.53939201e-01]
		[-1.e+04 2.e+00]			[0.87647959 6.]
9	13	[-2499.34423214	5.1	]	[4.33050563e+03	
		1.60934769e+00]			[0.87647959 10.]
10	9	[-1999.30007143	4.95	]	[4.00034996e+03	
		1.20312094e+00]			[0.87647959 9.]
11	8	[-1999.29890306	4.75	]	[4.00035055e+03	
		9.93730346e-01]			[0.87647959 7.]

Iteration 1, loss = inf

Validation score: 0.746429

Iteration 2, loss = inf

Validation score: 0.772449

Iteration 3, loss = inf

Validation score: 0.782653

Iteration 4, loss = inf

Validation score: 0.413776

Iteration 5, loss = inf

Validation score: 0.782653

Iteration 6, loss = inf

Validation score: 0.382143

Iteration 7, loss = inf

Validation score: 0.806122

Iteration 8, loss = inf

Validation score: 0.797449

Iteration 9, loss = inf

Validation score: 0.787245

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg		std	
	min		max		
0	20	[0.71818878 3.5	]	[0.07922048 1.46628783]	
		[0.63877551 1.	]	[0.85673469 5.	
1	13	[-499.24986735	3.85	]	[2.17962156e+03 1.01365675e+00]
		[-1.e+04 1.e+00]			[0.85755102 6.
2	10	[-999.26130867	4.05	]	[3.00024623e+03 9.20597632e-01]
		[-1.e+04 2.e+00]			[0.85755102 6.
3	12	[-1499.28519898	4.	]	[3.57101449e+03
		1.04880885e+00]			[0.87168367 6.
4	7	[-499.18808673	3.75	]	[2.17963574e+03
		9.93730346e-01]			[0.87168367 7.
5	13	[0.85225255 3.4	]	[0.0460208 0.96953597]	
		[0.65372449 1.	]	[0.87168367 5.	


```

6      8      [-499.176125    3.75    ]      [2.17963848e+03
9.93730346e-01] [-1.e+04    3.e+00]      [0.87168367 6.      ]
Iteration 1, loss = inf
Validation score: 0.402551
Iteration 2, loss = inf
Validation score: 0.744898
Iteration 3, loss = inf
Validation score: 0.735204
Iteration 4, loss = inf
Validation score: 0.376531
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.

```

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.66693367 3.25]	[0.10116705 1.25996032]
		[0.38418367 1.]	[0.85755102 5.]
1	14	[-999.3307551 3.85]	[3.00022308e+03 1.76847392e+00]
		[-10000. 0.]	[0.85755102 9.]
2	10	[-499.26706122 3.65]	[2.17961762e+03 1.49248116e+00]
		[-1.e+04 1.e+00]	[0.85755102 7.]
3	11	[-499.19710204 2.95]	[2.17963367e+03 1.65755845e+00]
		[-1.e+04 1.e+00]	[0.87147959 8.]
4	11	[-1499.27476531 3.15]	[3.57101887e+03
		1.76847392e+00] [-1.e+04 1.e+00]	[0.87147959 8.]
5	6	[0.86316327 2.95]	[0.00679087 1.1169154]
		[0.85755102 1.]	[0.87147959 4.]
6	12	[-999.23607143 4.2]	[3.00025464e+03
		8.12403840e-01] [-1.e+04 2.e+00]	[0.87147959 6.]

```

Iteration 1, loss = inf
Validation score: 0.762245
Iteration 2, loss = inf
Validation score: 0.791327
Iteration 3, loss = inf
Validation score: 0.730102
Iteration 4, loss = inf
Validation score: 0.792857
Iteration 5, loss = inf
Validation score: 0.771429
Iteration 6, loss = inf
Validation score: 0.731633
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.

```

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.67492092 2.85]	[0.09505857 1.23592071]
		[0.36061224 1.]	[0.81596939 5.]
1	12	[-1499.35223214 3.3]	[3.57098633e+03
		1.48660687e+00] [-1.e+04 2.e+00]	[0.85683673 7.]
2	13	[0.76634184 3.25]	[0.07448817 0.94207218]
		[0.63831633 2.]	[0.85760204 5.]
3	12	[-999.23942092 3.2]	[3.00025353e+03
		1.40000000e+00] [-1.e+04 2.e+00]	[0.85760204 7.]
4	13	[-999.23272449 2.8]	[3.00025576e+03
		1.40000000e+00] [-1.e+04 1.e+00]	[0.85760204 6.]

```

5      14      [-499.18583418    2.5      ]      [2.17963625e+03
1.68819430e+00] [-1.e+04  1.e+00]      [0.86984694  9.      ]
6      18      [-999.24241327    3.6      ]      [3.00025253e+03
1.59373775e+00] [-1.e+04  1.e+00]      [0.86984694  7.      ]
7       8      [-499.17677296    3.95     ]      [2.17963833e+03
1.28354977e+00] [-1.e+04  2.e+00]      [0.86984694  6.      ]
8      11      [-1499.26445663    4.9      ]      [3.57102320e+03
1.04403065e+00] [-1.e+04  3.e+00]      [0.86984694  8.      ]
Iteration 1, loss = inf
Validation score: 0.738265
Iteration 2, loss = inf
Validation score: 0.780102
Iteration 3, loss = inf
Validation score: 0.729592
Iteration 4, loss = inf
Validation score: 0.781122
Iteration 5, loss = inf
Validation score: 0.795408
Iteration 6, loss = inf
Validation score: 0.403571
Iteration 7, loss = inf
Validation score: 0.375000
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.

```

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.67167347 3.2	[0.05210864 1.50332964]
		[0.62647959 1.]	[0.81841837 5.]
1	10	[-499.34092602 3.55	[2.17960067e+03 1.35922772e+00]
		[-1.e+04 1.e+00]	[0.81841837 6.]
2	10	[-1999.40552551 4.1	[4.00029724e+03
		[1.86815417e+00] [-1.e+04 2.e+00]	[0.81841837 8.]
3	8	[0.78432398 3.1	[0.05589528 1.09087121]
		[0.66882653 2.]	[0.85688776 5.]
4	9	[0.82408163 2.9	[0.01399897 0.99498744]
		[0.81163265 2.]	[0.85693878 5.]
5	9	[-499.21414541 4.1	[2.17962976e+03
		[8.30662386e-01] [-1.e+04 3.e+00]	[0.85709184 7.]
6	9	[-1499.2733648 4.55	[3.57101946e+03
		[1.02347447e+00] [-1.e+04 4.e+00]	[0.85714286 8.]
7	16	[-1499.27157143 4.7	[3.57102022e+03
		[1.30766968e+00] [-1.e+04 3.e+00]	[0.85734694 8.]
8	8	[-999.22864796 4.5	[3.00025712e+03
		[9.21954446e-01] [-1.e+04 3.e+00]	[0.85739796 7.]
9	9	[-499.18780357 4.35	[2.17963580e+03
		[9.63068014e-01] [-1.e+04 3.e+00]	[0.85739796 7.]
10	10	[-1499.27123214 4.2	[3.57102036e+03
		[1.24899960e+00] [-1.e+04 3.e+00]	[0.85816327 7.]
11	12	[-499.18545408 3.5	[2.17963634e+03
		[8.06225775e-01] [-1.e+04 3.e+00]	[0.85816327 6.]
12	10	[-499.18524235 3.35	[2.17963639e+03
		[9.09670270e-01] [-1.e+04 2.e+00]	[0.85816327 6.]
13	7	[-499.18493622 2.95	[2.17963646e+03
		[1.07121426e+00] [-1.e+04 2.e+00]	[0.85816327 7.]
14	17	[-499.18481888 2.55	[2.17963649e+03
		[9.20597632e-01] [-1.e+04 2.e+00]	[0.85816327 6.]

```

15      11      [-499.1847449    2.25      ]      [2.17963650e+03
8.87411967e-01] [-1.e+04    2.e+00]      [0.85816327 6.      ]
Iteration 1, loss = inf
Validation score: 0.721429
Iteration 2, loss = inf
Validation score: 0.762755
Iteration 3, loss = inf
Validation score: 0.726020
Iteration 4, loss = inf
Validation score: 0.730102
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.

```

Selecting features with genetic algorithm.

gen	nevals	avg	std	min
0	20	[0.67609694 3.3]	[0.0970385 1.4525839]	
	max			
		[0.3972449 1.]	[0.85852041 5.]	
1	10	[-1999.40714286 4.1]	[4.00029643e+03	
		1.60934769e+00] [-1.e+04 1.e+00]	[0.85852041 7.]	
2	11	[-499.271 3.95]	[2.17961672e+03	
		1.56444878e+00] [-1.e+04 2.e+00]	[0.85852041 8.]	
3	15	[-999.285125 3.65]	[3.00023829e+03	
		1.49248116e+00] [-1.e+04 2.e+00]	[0.87091837 7.]	
4	12	[-1499.28591327 4.05]	[3.57101419e+03	
		1.49916644e+00] [-1.e+04 2.e+00]	[0.87091837 7.]	
5	14	[-499.20024235 4.45]	[2.17963295e+03	
		1.16081868e+00] [-1.e+04 3.e+00]	[0.87091837 8.]	
6	11	[-1499.27563265 4.55]	[3.57101851e+03	
		1.02347447e+00] [-1.e+04 3.e+00]	[0.87107143 7.]	
7	6	[-1499.260625 4.8]	[3.57102481e+03	
		1.02956301e+00] [-1.e+04 3.e+00]	[0.87107143 7.]	
8	11	[-499.17548724 4.7]	[2.17963863e+03	
		7.14142843e-01] [-1.e+04 4.e+00]	[0.87107143 7.]	
9	13	[-1499.25959949 4.45]	[3.57102524e+03	
		8.64580823e-01] [-1.e+04 4.e+00]	[0.87117347 7.]	
10	9	[-999.21706888 4.3]	[3.00026098e+03	
		8.42614977e-01] [-1.e+04 3.e+00]	[0.8719898 7.]	
11	12	[-999.23642347 4.2]	[3.00025453e+03	
		1.20830460e+00] [-1.e+04 3.e+00]	[0.8719898 8.]	
12	14	[-999.23065561 4.05]	[3.00025645e+03	
		1.16081868e+00] [-1.e+04 3.e+00]	[0.8719898 7.]	
13	13	[-999.21733163 3.65]	[3.00026089e+03	
		1.01365675e+00] [-1.e+04 3.e+00]	[0.87204082 6.]	
14	8	[-1999.30239796 4.15]	[4.00034880e+03	
		1.68151717e+00] [-1.e+04 3.e+00]	[0.87204082 9.]	
15	10	[-499.19247194 3.95]	[2.17963473e+03	
		9.73396117e-01] [-1.e+04 3.e+00]	[0.87204082 6.]	
16	13	[-999.21591071 4.55]	[3.00026136e+03	
		1.62711401e+00] [-1.e+04 2.e+00]	[0.87204082 10.]	
17	11	[0.86472704 4.3]	[0.03180985 0.45825757]	
		[0.72607143 4.]	[0.87204082 5.]	

```

Iteration 1, loss = inf
Validation score: 0.795408
Iteration 2, loss = inf
Validation score: 0.729592
Iteration 3, loss = inf
Validation score: 0.757143

```

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.67783163 2.8]	[0.05935475 1.53622915]
		[0.61280612 1.]	[0.82653061 5.]
1	4	[-999.35268367 3.7]	[3.00021577e+03 1.41774469e+00]
		[-1.e+04 1.e+00]	[0.82653061 6.]
2	11	[-1499.35066071 4.3]	[3.57098699e+03]
		[1.45258390e+00] [-1.e+04 2.e+00]	[0.82653061 8.]
3	8	[-499.23282908 4.1]	[2.17962547e+03]
		[9.43398113e-01] [-1.e+04 2.e+00]	[0.83071429 6.]
4	11	[-499.21522194 4.25]	[2.17962951e+03]
		[1.21963109e+00] [-1.e+04 2.e+00]	[0.83071429 9.]
5	9	[-999.2552551 4.3]	[3.00024825e+03]
		[9.00000000e-01] [-1.e+04 3.e+00]	[0.83071429 7.]
6	8	[0.82674235 3.9]	[0.00647526 0.53851648]
		[0.80658163 3.]	[0.83071429 5.]

Iteration 1, loss = inf

Validation score: 0.766837

Iteration 2, loss = inf

Validation score: 0.780612

Iteration 3, loss = inf

Validation score: 0.779592

Iteration 4, loss = inf

Validation score: 0.747449

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.68518878 3.15]	[0.05668141 1.42390309]
		[0.63591837 1.]	[0.85668367 5.]
1	8	[0.74094898 3.5]	[0.07046378 1.28452326]
		[0.64403061 1.]	[0.85668367 5.]
2	7	[0.79130357 3.45]	[0.06837965 1.02347447]
		[0.68239796 1.]	[0.85719388 5.]
3	12	[-999.23849745 2.95]	[3.00025383e+03 1.46543509e+00]
		[-1.e+04 1.e+00]	[0.85719388 6.]
4	6	[0.85705102 1.7]	[2.29081064e-04 1.14455231e+00]
		[0.85642857 1.]	[0.85719388 5.]
5	13	[0.85671173 1.4]	[0.00185011 0.73484692]
		[0.84867347 1.]	[0.85719388 3.]

Iteration 1, loss = inf

Validation score: 0.793367

Iteration 2, loss = inf

Validation score: 0.742857

Iteration 3, loss = inf

Validation score: 0.791327

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.68655102 3.45]	[0.06377509 1.1169154]
		[0.59637755 1.]	[0.81244898 5.]

1	8	[-999.32645918	4.1	]	[3.00022451e+03	1.17898261e+00]
		[-1.e+04	2.e+00]		[0.81244898	6.]
2	10	[-499.26355102	4.5	]	[2.17961843e+03	9.74679434e-01]
		[-1.e+04	2.e+00]		[0.81418367	6.]
3	12	[-499.2361199	4.7	]	[2.17962472e+03	1.38202750e+00]
		[-1.e+04	1.e+00]		[0.81454082	9.]
4	13	[-999.26721173	4.3	]	[3.00024426e+03	1.00498756e+00]
		[-1.e+04	3.e+00]		[0.81989796	6.]
5	17	[-999.26680867	4.25	]	[3.00024440e+03	1.29903811e+00]
		[-1.e+04	3.e+00]		[0.81989796	8.]
6	12	[-999.26410204	4.55	]	[3.00024530e+03	1.49916644e+00]
		[-1.e+04	3.e+00]		[0.81989796	9.]
7	15	[-2499.38564796	5.05	]	[4.33048172e+03	
		1.11691540e+00]			[-1.e+04	3.e+00]
					[0.81989796	8.]

Iteration 1, loss = inf

Validation score: 0.745918

Iteration 2, loss = inf

Validation score: 0.789796

Iteration 3, loss = inf

Validation score: 0.772959

Iteration 4, loss = inf

Validation score: 0.761735

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std	min		
0	20	[0.66309439	2.5	]	[0.0870652	1.161895]
		[0.36061224	1.]		[0.82040816	5.]
1	3	[-999.35166582	2.85	]	[3.00021611e+03	1.45859521e+00]
		[-10000. 0.]			[0.82040816	6.]
2	14	[-1499.33895918	3.85	]	[3.57099191e+03	
		1.35185058e+00]			[-1.e+04	1.e+00]
					[0.82071429	6.]
3	9	[-499.2243801	4.25	]	[2.17962741e+03	
		6.98212002e-01]			[-1.e+04	3.e+00]
					[0.82071429	6.]
4	12	[-499.22049745	4.7	]	[2.1796283e+03	
		9.00000000e-01]			[-1.e+04	4.e+00]
					[0.82117347	8.]
5	11	[-2999.43312755	5.6	]	[4.58294680e+03	
		1.39283883e+00]			[-1.e+04	4.e+00]
					[0.82117347	9.]
6	12	[-999.27661224	5.]		[3.00024113e+03	
		6.32455532e-01]			[-1.e+04	4.e+00]
					[0.82117347	7.]
7	7	[-999.26123469	5.1	]	[3.00024626e+03	
		5.38516481e-01]			[-1.e+04	4.e+00]
					[0.82117347	7.]

Iteration 1, loss = inf

Validation score: 0.726531

Iteration 2, loss = inf

Validation score: 0.430102

Iteration 3, loss = inf

Validation score: 0.798469

Iteration 4, loss = inf

Validation score: 0.728571

Iteration 5, loss = inf

Validation score: 0.719388

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.69698214 2.9 [0.63964286 1.]]	[0.06994445 1.37477271] [0.8580102 5.]]
1	12	[-499.28673469 3.65 [-1.e+04 1.e+00]	[2.17961311e+03 2.10416254e+00] [0.8580102 10.]]
2	10	[-499.2312602 3.15 [-10000. 0.]	[2.17962583e+03 1.42390309e+00] [0.8580102 5.]]
3	9	[-499.22678061 3.2 [-1.e+04 1.e+00]	[2.17962686e+03 1.63095064e+00] [0.8580102 8.]]

Iteration 1, loss = inf

Validation score: 0.758163

Iteration 2, loss = inf

Validation score: 0.784694

Iteration 3, loss = inf

Validation score: 0.727041

Iteration 4, loss = inf

Validation score: 0.786735

Iteration 5, loss = inf

Validation score: 0.751531

Iteration 6, loss = inf

Validation score: 0.734694

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.69317602 3.2 [0.63913265 1.]]	[0.06733643 1.53622915] [0.83285714 5.]]
1	10	[-499.30886735 3.5 [-1.e+04 1.e+00]	[2.17960803e+03 1.39642400e+00] [0.83285714 6.]]
2	13	[-1999.37584184 3.55 1.59608897e+00 [-10000. 0.]	[4.00031208e+03 [0.83311224 6.]]
3	12	[-999.29757653 3.6 1.49666295e+00 [-1.e+04 2.e+00]	[3.00023414e+03 [0.83311224 7.]]
4	13	[0.82493878 2.6 [0.71316327 2.]]	[0.02621461 0.73484692] [0.83311224 4.]]
5	16	[-499.20955867 3. 1.18321596e+00 [-1.e+04 2.e+00]	[2.17963081e+03 [0.83311224 6.]]

Iteration 1, loss = inf

Validation score: 0.766837

Iteration 2, loss = inf

Validation score: 0.789796

Iteration 3, loss = inf

Validation score: 0.784184

Iteration 4, loss = inf

Validation score: 0.778571

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min		max
0	20	[0.72311224 3.15 [0.38658163 1.]]	[0.11069654 1.23592071] [0.86928571 5.]]
1	11	[-999.30032908 3.55 [-1.e+04 1.e+00]	[3.00023322e+03 1.88348082e+00] [0.86928571 10.]]

```

2      5      [-499.22210459      3.5      ] [2.17962793e+03 9.21954446e-01]
      [-1.e+04 2.e+00] [0.86928571 6.      ]
3      6      [0.82140051 3.25      ] [0.04153704 0.4330127 ]
      [0.67229592 3.      ] [0.86928571 4.      ]

```

Iteration 1, loss = inf

Validation score: 0.723980

Iteration 2, loss = inf

Validation score: 0.767347

Iteration 3, loss = inf

Validation score: 0.770918

Iteration 4, loss = inf

Validation score: 0.402041

Iteration 5, loss = inf

Validation score: 0.782653

Iteration 6, loss = inf

Validation score: 0.770918

Iteration 7, loss = inf

Validation score: 0.796429

Iteration 8, loss = inf

Validation score: 0.774490

Iteration 9, loss = inf

Validation score: 0.749490

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min
0      20      [0.67777296 2.15      ] [0.06156193 1.10792599]
      [0.62372449 1.      ] [0.85760204 5.      ]
1      10      [-999.33931633      3.05      ] [3.00022023e+03 1.59608897e+00]
      [-10000.      0.] [0.87147959 7.      ]
2      14      [-999.28145408      2.85      ] [3.00023952e+03 1.52561463e+00]
      [-1.e+04 1.e+00] [0.87147959 7.      ]
3      12      [0.85241327 1.75      ] [0.02928055 0.698212 ]
      [0.72607143 1.      ] [0.87147959 3.      ]
4      7      [0.85187245 2.25      ] [0.04101458 1.1779219 ]
      [0.675 1.      ] [0.87147959 4.      ]

```

Iteration 1, loss = inf

Validation score: 0.408163

Iteration 2, loss = inf

Validation score: 0.370408

Iteration 3, loss = inf

Validation score: 0.787755

Iteration 4, loss = inf

Validation score: 0.741837

Iteration 5, loss = inf

Validation score: 0.770408

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

```

gen      nevals  avg      std      min
      max
0      20      [0.66594643 3.2      ] [0.0478385 1.2489996]
      [0.55428571 1.      ] [0.77142857 5.      ]
1      12      [-999.37458418      3.75      ] [3.00020847e+03 1.66958079e+00]
      [-1.e+04 1.e+00] [0.81132653 6.      ]

```

```

2      12      [-1499.36650255      4.7      ]      [3.57098034e+03
1.67630546e+00] [-1.e+04      1.e+00]      [0.81352041      8.      ]
3      11      [-1999.37144898      5.      ]      [4.00031428e+03
1.14017543e+00] [-1.e+04      3.e+00]      [0.81352041      8.      ]
4      8      [-999.2860102      4.2      ]      [3.0002380e+03
9.2736185e-01] [-1.e+04      3.e+00]      [0.81352041      6.      ]
5      10      [-499.23387755      4.2      ]      [2.17962523e+03
8.12403840e-01] [-1.e+04      3.e+00]      [0.81352041      7.      ]

```

Iteration 1, loss = inf

Validation score: 0.764286

Iteration 2, loss = inf

Validation score: 0.725000

Iteration 3, loss = inf

Validation score: 0.738776

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.68907143      2.6      ]      [0.05978862      1.3190906      ]
      [0.63913265      1.      ]      [0.80959184      5.      ]
1      11      [-999.30647194      3.55      ]      [3.00023118e+03      1.32193041e+00]
      [-1.e+04      1.e+00]      [0.85734694      6.      ]
2      7      [-1499.30590306      4.05      ]      [3.57100579e+03
1.35922772e+00] [-1.e+04      2.e+00]      [0.85734694      7.      ]
3      8      [-999.26471173      4.1      ]      [3.00024510e+03
1.09087121e+00] [-1.e+04      3.e+00]      [0.85739796      6.      ]
4      14      [-2999.42284439      5.      ]      [4.58295353e+03
1.61245155e+00] [-1.e+04      1.e+00]      [0.85739796      8.      ]
5      12      [-1499.28241837      4.85      ]      [3.57101566e+03
1.15217186e+00] [-1.e+04      2.e+00]      [0.85739796      7.      ]
6      12      [-999.228375      4.4      ]      [3.00025721e+03
6.63324958e-01] [-1.e+04      4.e+00]      [0.85739796      6.      ]

```

Iteration 1, loss = inf

Validation score: 0.366837

Iteration 2, loss = inf

Validation score: 0.744898

Iteration 3, loss = inf

Validation score: 0.727041

Iteration 4, loss = inf

Validation score: 0.766837

Iteration 5, loss = inf

Validation score: 0.375000

Iteration 6, loss = inf

Validation score: 0.730612

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.70620663      2.8      ]      [0.08627723      1.46969385]
      [0.61158163      1.      ]      [0.85622449      5.      ]
1      10      [-499.24476531      3.75      ]      [2.17962274e+03      1.13468057e+00]
      [-1.e+04      2.e+00]      [0.87147959      6.      ]
2      15      [-499.21931122      3.85      ]      [2.17962858e+03      1.10792599e+00]
      [-1.e+04      2.e+00]      [0.87147959      6.      ]

```



```

3      14      [-499.18160969      3.15      ] [2.17963722e+03 1.06183803e+00]
      [-1.e+04  2.e+00] [0.87147959 6.      ]
4      11      [-499.17374745      3.1      ] [2.17963903e+03 1.44568323e+00]
      [-1.e+04  2.e+00] [0.87183673 8.      ]
5      12      [0.87040561 3.15      ] [0.00453274 0.90967027]
      [0.85071429 2.      ] [0.87183673 5.      ]
6      8      [0.87143367 3.3      ] [0.0012756 0.84261498]
      [0.86591837 2.      ] [0.87183673 5.      ]
7      12      [-999.215375      3.75      ] [3.00026154e+03 1.04283268e+00]
      [-1.e+04  2.e+00] [0.87183673 6.      ]
8      11      [0.85781888 3.55      ] [0.0419943 0.73993243]
      [0.72658163 3.      ] [0.87183673 5.      ]

```

Iteration 1, loss = inf

Validation score: 0.782143

Iteration 2, loss = inf

Validation score: 0.748980

Iteration 3, loss = inf

Validation score: 0.445408

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.70518367 3.85      ] [0.07121586 1.42390309]
      [0.63887755 1.      ] [0.8575 5.      ]
1      7      [-999.29606633      4.85      ] [3.00023465e+03 1.23592071e+00]
      [-1.e+04  3.e+00] [0.8575 9.      ]
2      14      [-1499.28805102      4.95      ] [3.57101329e+03
7.39932429e-01] [-1.e+04  4.e+00] [0.85811224 7.      ]
3      10      [-2499.37227551      5.2      ] [4.33048944e+03
1.12249722e+00] [-1.e+04  3.e+00] [0.85826531 8.      ]
4      12      [-2499.35681378      5.2      ] [4.33049836e+03
8.12403840e-01] [-1.e+04  4.e+00] [0.85826531 7.      ]
5      10      [-1499.27093112      4.8      ] [3.57102048e+03
8.12403840e-01] [-1.e+04  4.e+00] [0.85826531 7.      ]
6      7      [-499.19431888      4.25      ] [2.17963431e+03
6.22494980e-01] [-1.e+04  3.e+00] [0.85826531 6.      ]

```

Iteration 1, loss = inf

Validation score: 0.782143

Iteration 2, loss = inf

Validation score: 0.731633

Iteration 3, loss = inf

Validation score: 0.376531

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

```

gen      nevals  avg      std
      min      max
0      20      [0.68496429 3.2      ] [0.06008633 1.53622915]
      [0.63964286 1.      ] [0.83173469 5.      ]
1      6      [-999.35260714      4.4      ] [3.00021580e+03 1.39283883e+00]
      [-1.e+04  1.e+00] [0.83173469 7.      ]
2      13      [-1999.40764031      4.7      ] [4.00029618e+03
1.79164729e+00] [-1.e+04  2.e+00] [0.83173469 10.      ]
3      15      [-2999.43419898      5.      ] [4.58294610e+03
1.73205081e+00] [-1.e+04  2.e+00] [0.83173469 9.      ]

```

Iteration 1, loss = inf

Validation score: 0.773469
 Iteration 2, loss = inf
 Validation score: 0.752041
 Iteration 3, loss = inf
 Validation score: 0.772449
 Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.69117602 3.25]	[0.09973957 1.57718103]
		[0.44015306 1.]	[0.8569898 5.]
1	12	[-2999.44660969 4.6]	[4.58293797e+03]
1.80000000e+00		[-1.e+04 1.e+00]	[0.85714286 7.]
2	11	[-999.27998214 4.35]	[3.00024001e+03]
1.38834434e+00		[-1.e+04 1.e+00]	[0.85714286 7.]
3	13	[0.847625 4.5]	[0.0183653 0.8660254]
		[0.81102041 3.]	[0.87132653 5.]
4	11	[-1499.27021939 5.25]	[3.57102078e+03]
1.17792190e+00		[-1.e+04 4.e+00]	[0.87132653 10.]
5	12	[-1999.31165816 5.3]	[4.00034417e+03]
7.81024968e-01		[-1.e+04 4.e+00]	[0.87132653 7.]
6	7	[-2499.34935969 5.65]	[4.33050267e+03]
1.73997126e+00		[-1.e+04 4.e+00]	[0.87132653 12.]

Iteration 1, loss = inf
 Validation score: 0.730612
 Iteration 2, loss = inf
 Validation score: 0.743878
 Iteration 3, loss = inf
 Validation score: 0.791837
 Iteration 4, loss = inf
 Validation score: 0.771429
 Iteration 5, loss = inf
 Validation score: 0.757143

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.66693367 2.7]	[0.03812644 1.22882057]
		[0.63903061 1.]	[0.81341837 5.]
1	12	[-1999.43793622 3.8]	[4.00028103e+03]
1.63095064e+00		[-10000. 0.]	[0.81341837 7.]
2	9	[-999.32123469 4.65]	[3.00022626e+03]
1.10792599e+00		[-1.e+04 2.e+00]	[0.82214286 7.]
3	7	[-499.2332449 4.7]	[2.17962538e+03]
8.42614977e-01		[-1.e+04 3.e+00]	[0.82214286 7.]
4	11	[-1499.30620663 5.1]	[3.57100567e+03]
4.35889894e-01		[-1.e+04 4.e+00]	[0.82214286 6.]
5	10	[-1999.34359439 5.45]	[4.00032820e+03]
1.07121426e+00		[-1.e+04 5.e+00]	[0.82214286 9.]

Iteration 1, loss = inf
 Validation score: 0.781122
 Iteration 2, loss = inf
 Validation score: 0.773980
 Iteration 3, loss = inf
 Validation score: 0.776531

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.68978827 3.2]	[0.06059512 1.46969385]
		[0.60714286 1.]	[0.84969388 5.]
1	13	[-999.33929847 4.5]	[3.00022023e+03 9.74679434e-01]
		[-1.e+04 3.e+00]	[0.84969388 7.]
2	13	[-2999.44232908 5.15]	[4.58294078e+03
		[1.01365675e+00] [-1.e+04 3.e+00]	[0.85709184 8.]
3	10	[-1999.35169643 5.3]	[4.00032415e+03
		[1.05356538e+00] [-1.e+04 4.e+00]	[0.85709184 9.]
4	8	[-1499.2997551 5.05]	[3.57100838e+03
		[8.64580823e-01] [-1.e+04 4.e+00]	[0.85709184 8.]
5	9	[-999.23953571 5.]	[3.00025349e+03
		[6.32455532e-01] [-1.e+04 4.e+00]	[0.85709184 7.]

Iteration 1, loss = inf

Validation score: 0.740816

Iteration 2, loss = inf

Validation score: 0.714286

Iteration 3, loss = inf

Validation score: 0.780102

Iteration 4, loss = inf

Validation score: 0.755612

Iteration 5, loss = inf

Validation score: 0.764286

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.66918112 2.7]	[0.0567876 1.51986842]
		[0.5594898 1.]	[0.8122449 5.]
1	9	[-499.32216837 3.45]	[2.17960498e+03 1.39552857e+00]
		[-1.e+04 1.e+00]	[0.8122449 6.]
2	12	[-499.29605612 3.35]	[2.17961097e+03 1.38834434e+00]
		[-1.e+04 1.e+00]	[0.8122449 7.]
3	11	[0.80322449 3.15]	[0.02879352 0.4769696]
		[0.68173469 3.]	[0.8122449 5.]

Iteration 1, loss = inf

Validation score: 0.798469

Iteration 2, loss = inf

Validation score: 0.780612

Iteration 3, loss = inf

Validation score: 0.759184

Validation score did not improve more than tol=0.000000 for 1 consecutive epochs. Stopping.

Selecting features with genetic algorithm.

gen	nevals	avg	std
	min	max	
0	20	[0.69408929 3.4]	[0.0654381 1.65529454]
		[0.63780612 1.]	[0.8577551 5.]
1	10	[-1999.39446684 4.65]	[4.00030277e+03
		[1.58981131e+00] [-1.e+04 1.e+00]	[0.8577551 9.]
2	12	[-999.27470408 4.55]	[3.00024177e+03
		[1.07121426e+00] [-1.e+04 2.e+00]	[0.8577551 7.]

```

3      9      [-1499.28676786      5.2      ]      [3.57101383e+03
1.43527001e+00] [-1.e+04  4.e+00]      [ 0.85806122 11.      ]
4      9      [-1499.27161224      4.95      ]      [3.57102020e+03
7.39932429e-01] [-1.e+04  4.e+00]      [0.85806122 7.      ]
5     11      [-2499.37001276      5.      ]      [4.33049074e+03
1.44913767e+00] [-1.e+04  3.e+00]      [0.85806122 9.      ]
6      9      [-1999.31369133      4.7      ]      [4.00034315e+03
1.14455231e+00] [-1.e+04  3.e+00]      [0.85806122 7.      ]
Iteration 1, loss = inf
Validation score: 0.753061
Iteration 2, loss = inf
Validation score: 0.747959
Iteration 3, loss = inf
Validation score: 0.734694
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.
Selecting features with genetic algorithm.
gen      nevals  avg                      std
      min                      max
0      20      [0.68830867 3.45      ]      [0.06144925 1.20312094]
      [0.63193878 1.      ]      [0.87168367 5.      ]
1      13      [-999.30941837      4.4      ]      [3.00023019e+03 1.88148877e+00]
      [-1.e+04  1.e+00]      [ 0.87168367 10.      ]
2      16      [-999.26068367      3.8      ]      [3.00024644e+03 1.56843871e+00]
      [-1.e+04  2.e+00]      [0.87168367 9.      ]
3      7      [-999.22751786      3.55      ]      [3.00025749e+03 1.43090880e+00]
      [-1.e+04  2.e+00]      [0.87168367 8.      ]
Iteration 1, loss = inf
Validation score: 0.780102
Iteration 2, loss = inf
Validation score: 0.792857
Iteration 3, loss = inf
Validation score: 0.740816
Iteration 4, loss = inf
Validation score: 0.763265
Validation score did not improve more than tol=0.000000 for 1 consecutive
epochs. Stopping.

```