

Adult数据集分类结果

Grid Search

best parameters: {'algorithm': 'SAMME.R', 'learning_rate': 1.0, 'n_estimators': 100}
best score: 0.8596022171503097
Time Elapse: 943.3204729557037

Grid Search Based GA

Best individual is: {'n_estimators': 100, 'learning_rate': 1.0, 'algorithm': 'SAMME.R'}
with fitness: 0.8596022171503097
Time Elapsed = 528.7194740772247

GA

POPULATION_SIZE = 20

P_CROSSOVER = 0.9 # probability for crossover

P_MUTATION = 0.3 # probability for mutating an individual

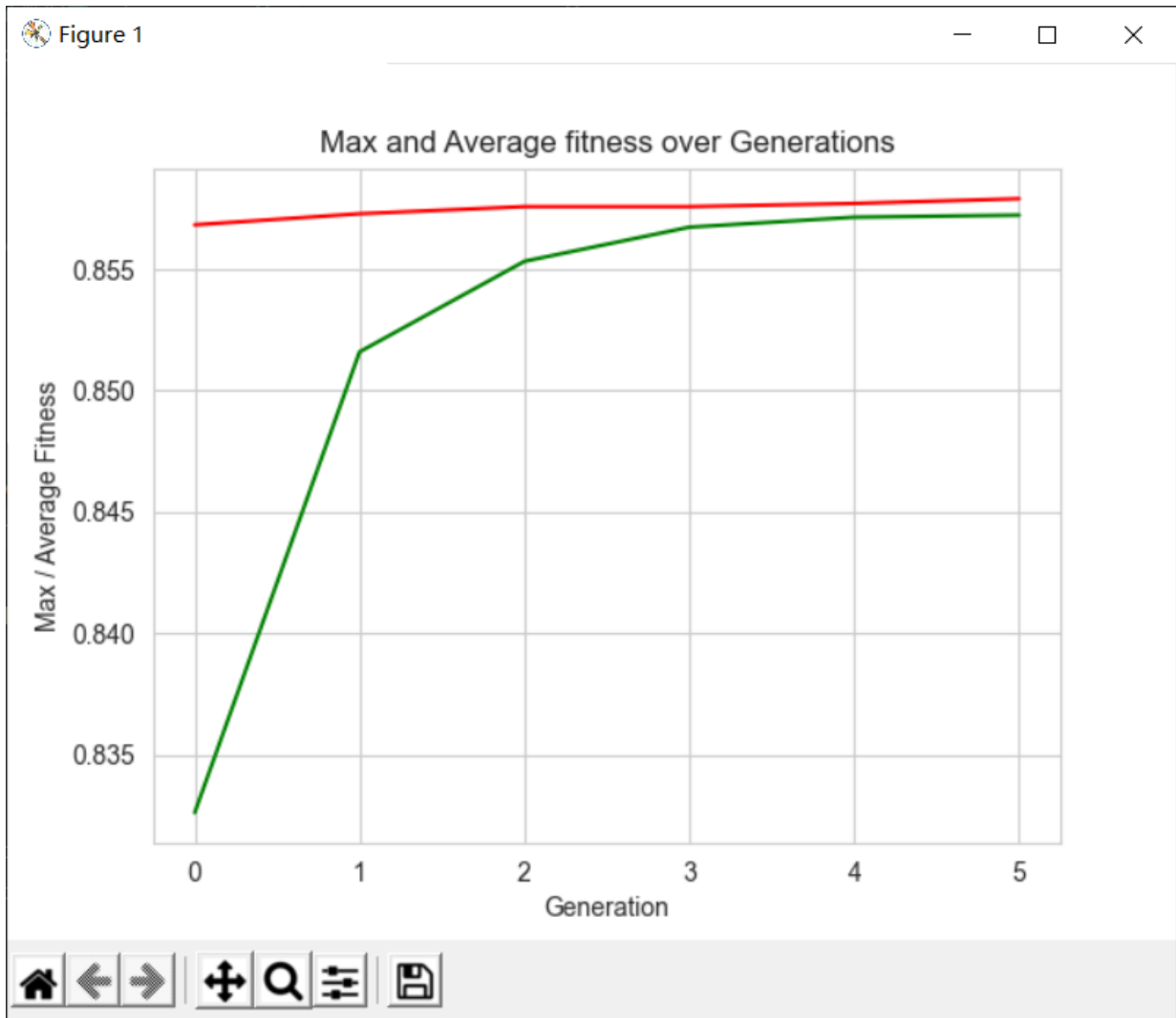
MAX_GENERATIONS = 5

HALL_OF_FAME_SIZE = 5

CROWDING_FACTOR = 20.0 # crowding factor for crossover and mutation

Best solution is:

params = 'n_estimators'= 91, 'learning_rate'=0.742, 'algorithm'=SAMME.R
Accuracy = 0.85791



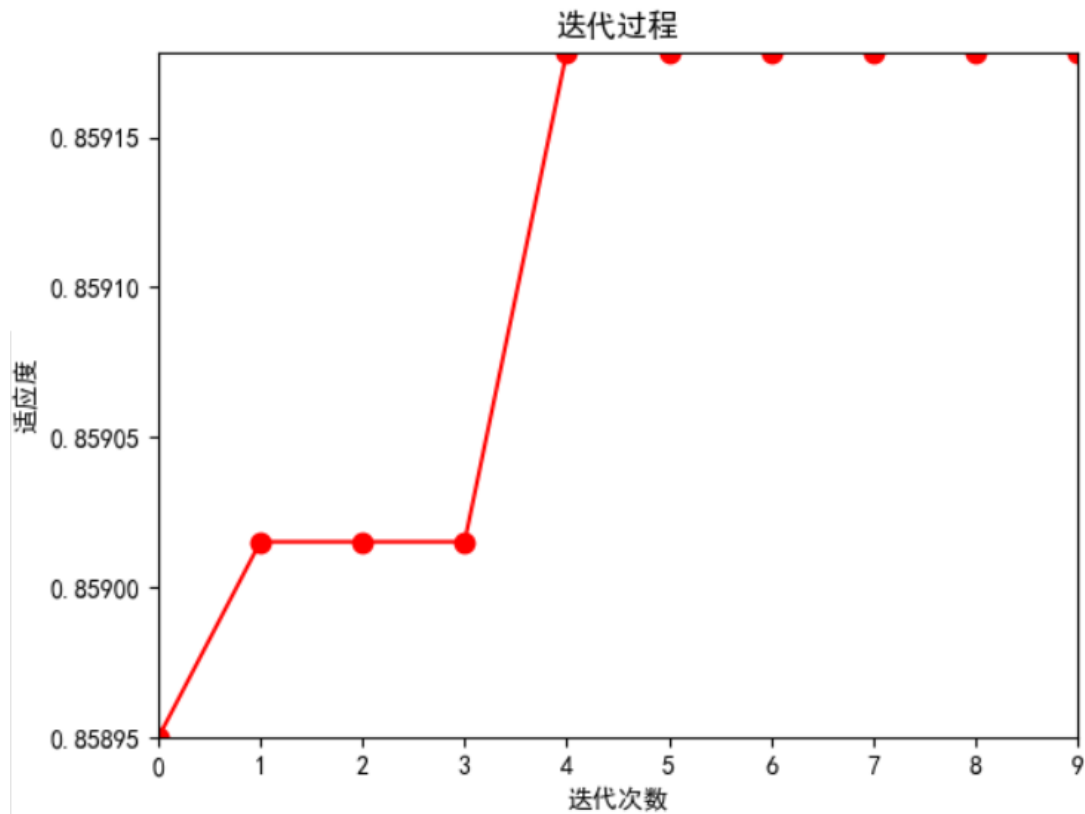
结果:

PSO

结果:

- $MAX_Generation = 10$ #迭代次数
 $Population = 10$ #种群数量
 $v_low = -1$
 $v_high = 1$
 $c1 = 2.0$ #学习因子
 $c2 = 2.0$
 $w = 0.8$

当前最佳位置: $[98.38612708 \ 0.87590522 \ 0.56149847]$
 0.8591783501793284
当前的最佳适应度: 0.8591783501793284
time cost: 1941.0392363071442



2. ##### 改变迭代次数和种群大小

#####

MAX_Generation = 50 #迭代次数

Population = 20 #种群数量

v_low = -1

v_high = 1

c1 = 2.0 # 学习因子

c2 = 2.0

w = 0.8

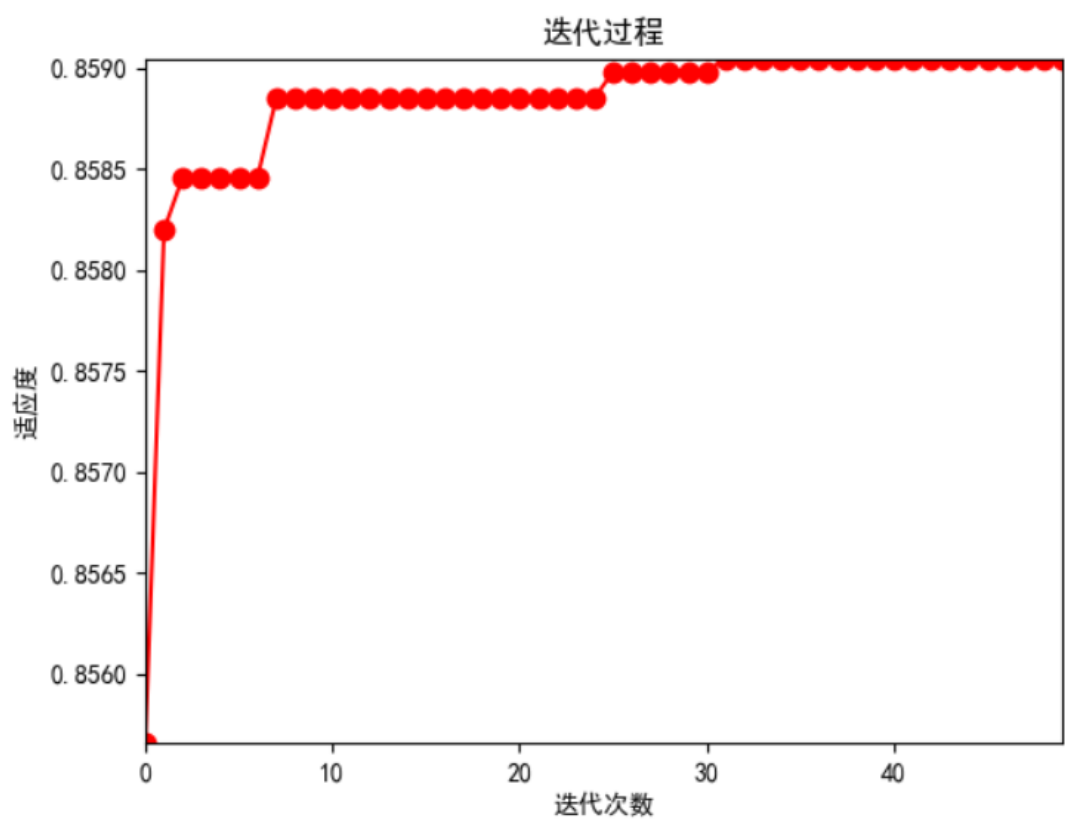
当前最佳位置: [89.82201383 0.82092164 0.51607745]

0.8590479295728726

当前的最佳适应度: 0.8590479295728726

time cost: 19768.351210832596 s

Figure 1



x=38.0343 y=0.856191