

Soft Computing in Engineering (ME674)

Coding Assignment -02 (Report)

By

Ashwinee Narware (204103102)

Preparing code for generalize binary coded genetic algorithm. To solve a optimization problem.

Minimize

$$F(x_1, x_2) = x_1 + x_2 + 2 * x_1^2 - x_2^2 + x_1 * x_2$$

Subjected to $0 < x_1, x_2 < 0.5$

Important Parameter

Number of parameters = 2

String length for x_1 = 20

String length for x_2 = 20

Crossover probability = 0.9

Mutation probability = 0.001

Result:

	Minimum (optimum)	_Mean	Maximum
F (x1, x2)	0.007389228273338	0.01667515214299575 3	0.15028302825221806
(x1 , x2)	(0.00370837 0.00370837)	(0.0086097, 0.0086097)	(0.08183916, 0.08183916)

Table(01)

Convergence curve:

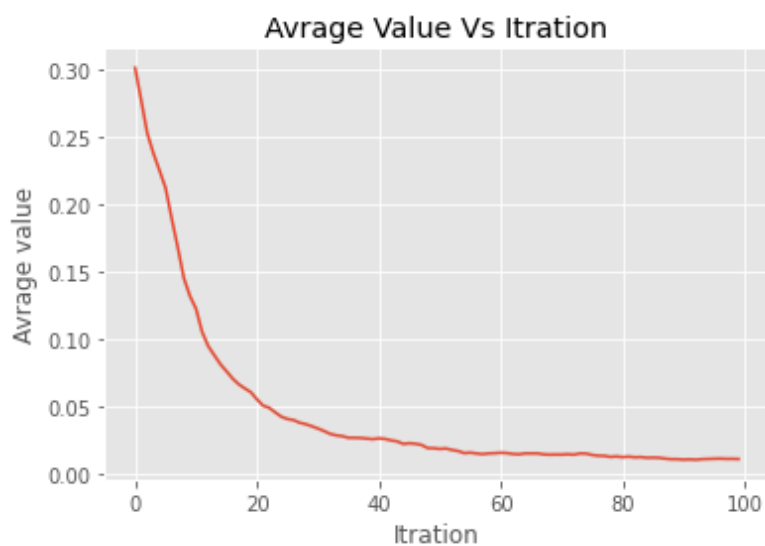


Fig. (1)

Mean X1 & X2

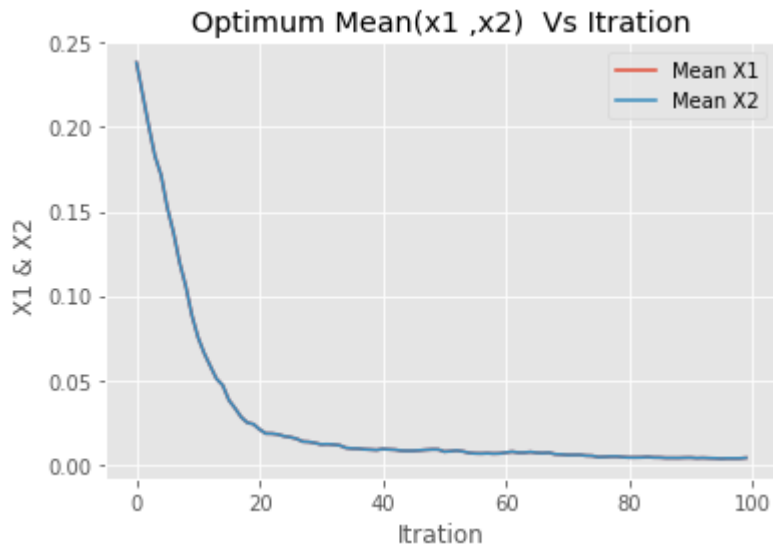
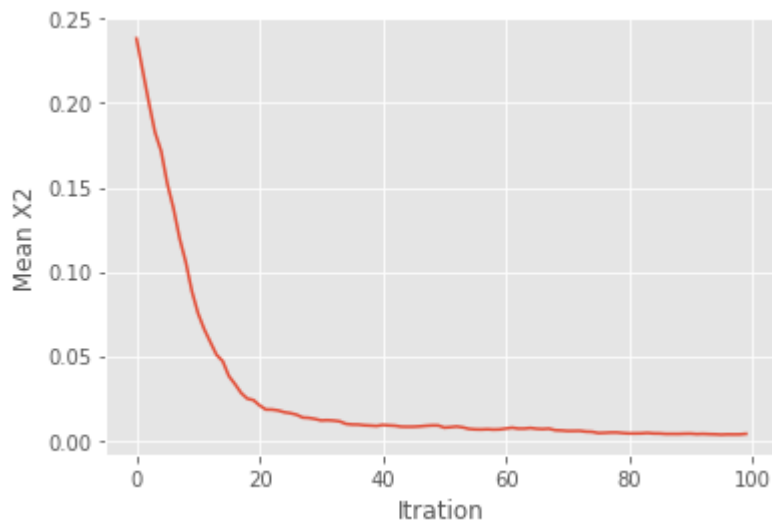
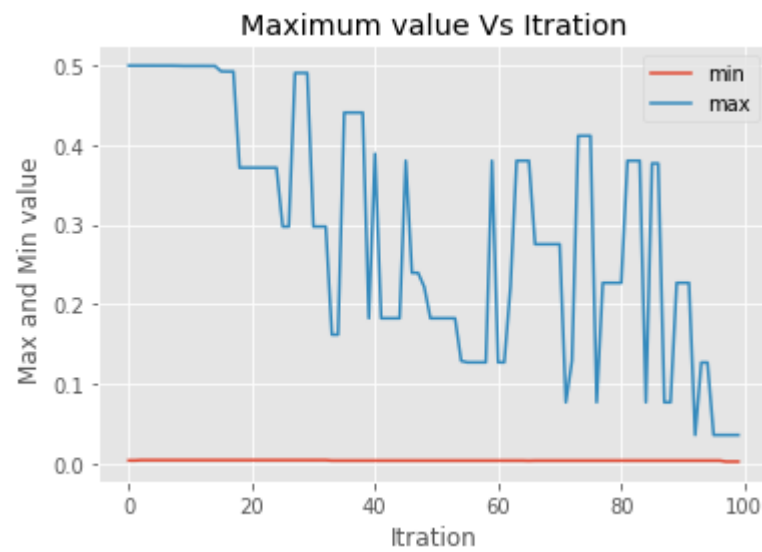


Fig.(02)



Fig(03)

Minimum and Maximum fitness value



Fig(04)