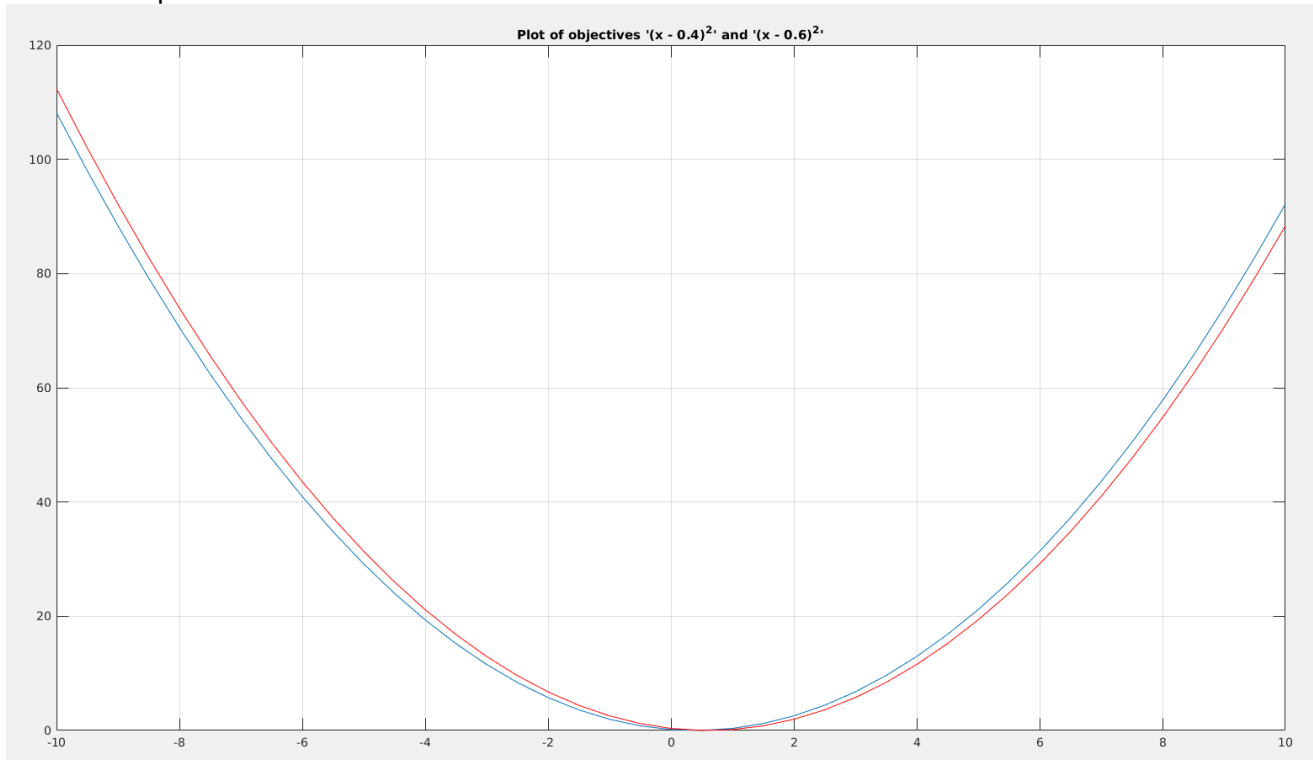


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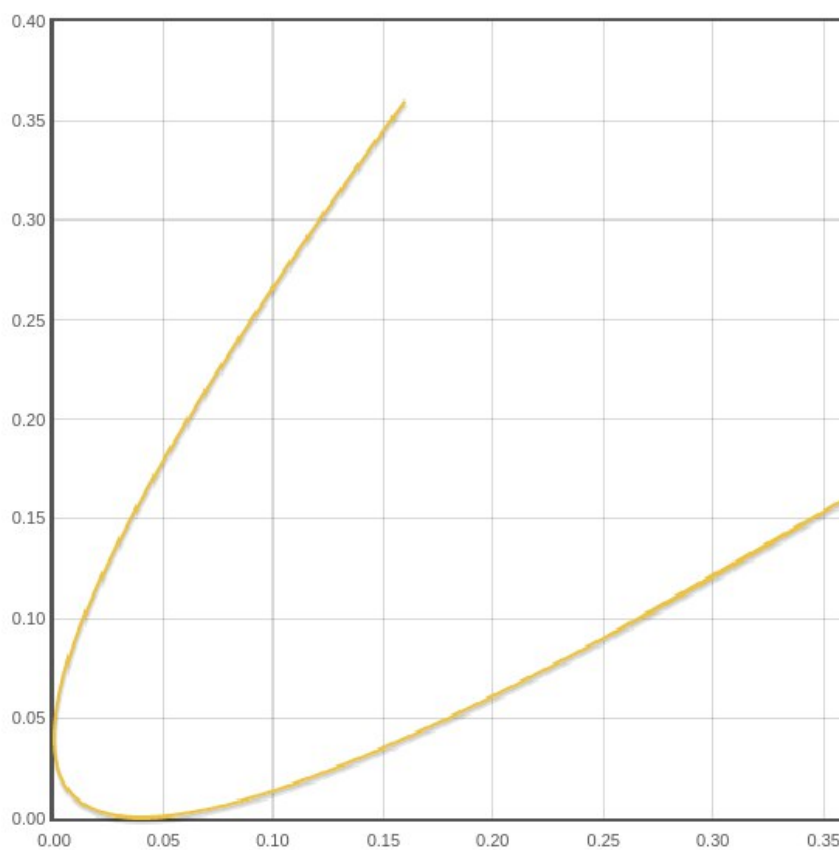
$$f1 = (x - 0.4)^2$$

$$f2 = (x - 0.6)^2$$

Graphic of two function:



Trade off two functions:

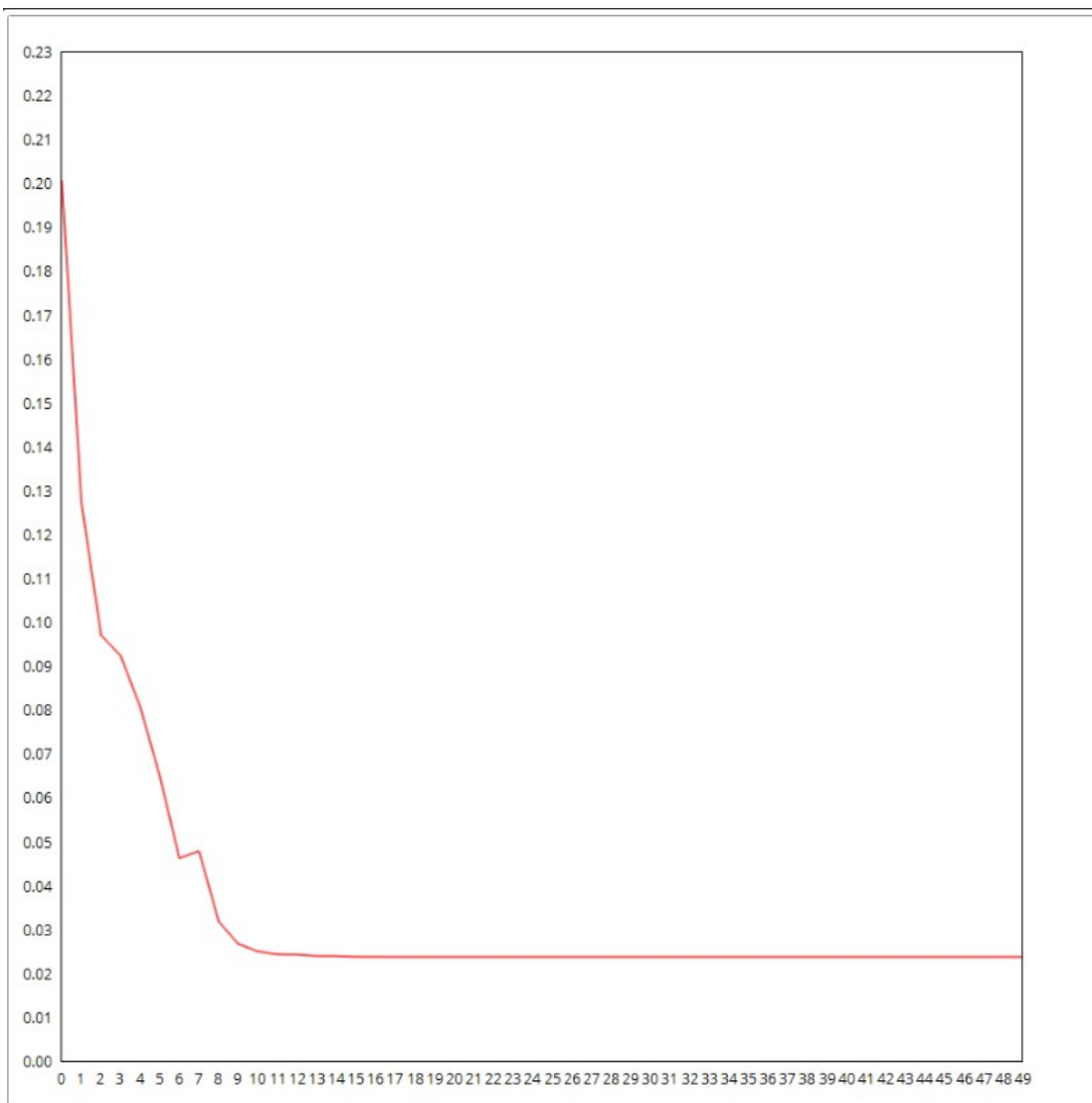


Size of chromosome	Size of population	Epoch	Mutation	Crossover	Selection
10	20	50 and 200	yes	One point	Truncate

Evolution:

X - generations

Y - Error (misses).



Start trade of table

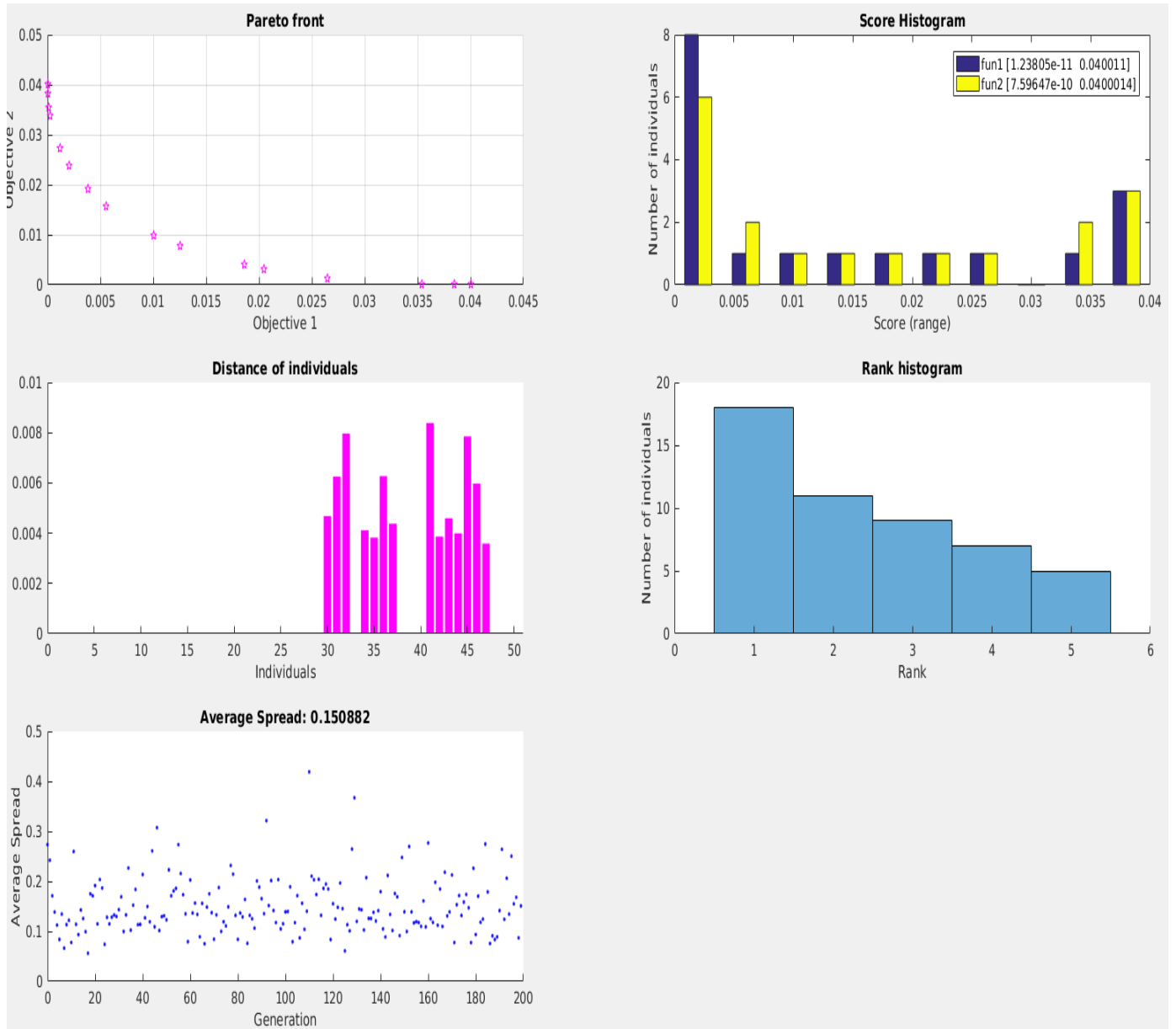
Rang	Chromosome	f1	f2	Dominated by	Dominate
0	111111110	0.35766006	0.15844132	18	0
1	111	0.15457799	0.3518436	18	1
1	10001	0.14699437	0.34035373	17	1
2	1111011101	0.32015264	0.1338245	16	2
3	1111001111	0.3048679	0.12400852	15	3
4	1111001110	0.30379045	0.12332168	14	4
5	1001001	0.10805088	0.27953526	13	5
6	1011100	0.0961969	0.2602594	12	6
7	10000101	0.0729633	0.22101016	11	7
8	10100100	0.057525024	0.19346252	10	8
9	1101001011	0.17913395	0.049837075	9	9
10	1100100100	0.14834534	0.034282837	8	10
11	11100010	0.03214737	0.14386612	7	11
12	1011110010	0.11311661	0.018585358	6	12
13	101000001	0.007486305	0.08209568	5	13
14	101001100	0.0057427976	0.076055296	4	14
15	101001101	0.0055957413	0.07551762	3	15
16	1010010001	0.058371317	0.00173069	2	16
17	1001101001	0.041022073	6.45E-06	1	17
18	111110100	0.0077935793	0.012481079	0	18

Iteration 10 trade off

Rang	Chromosome	f1	f2	Dominated by	Dominate
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110100	0.0077935793	0.012481079	2	0
1	111110111	0.008319435	0.01183506	0	17
1	111110111	0.008319435	0.01183506	0	17
0	111110111	0.008319435	0.01183506	0	17

Last iteration trade off

[illegible]



This graphics represent

Conclusion: Algorithm can found optimum for both functions $y_1(x) = (x-0.4)^2$ and $y_2(x) = (x-0.6)^2$. Optimum for both is $y_1(x)=y_2(x)=0.02$ and $x = 0.5$. To prof let to show trade-off graph:

axis X = $y_1(x)$

axis Y = $y_2(x)$