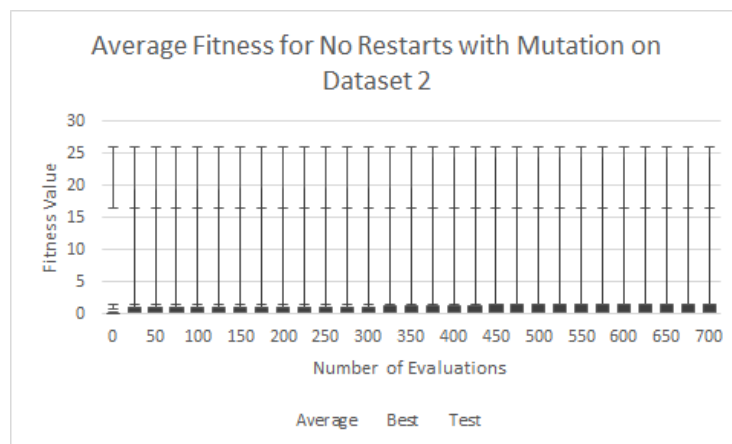
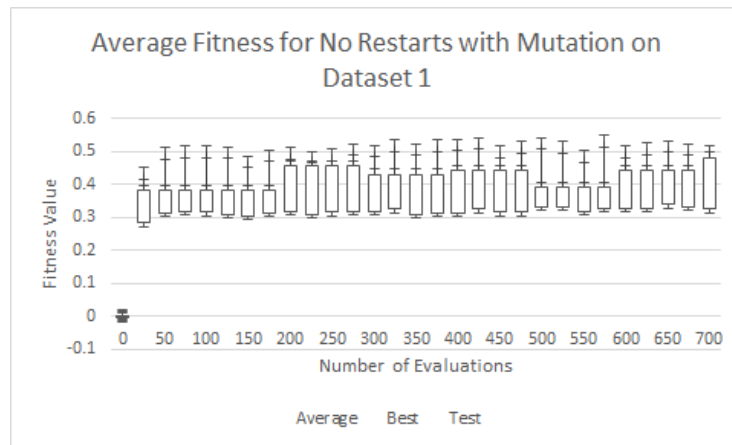


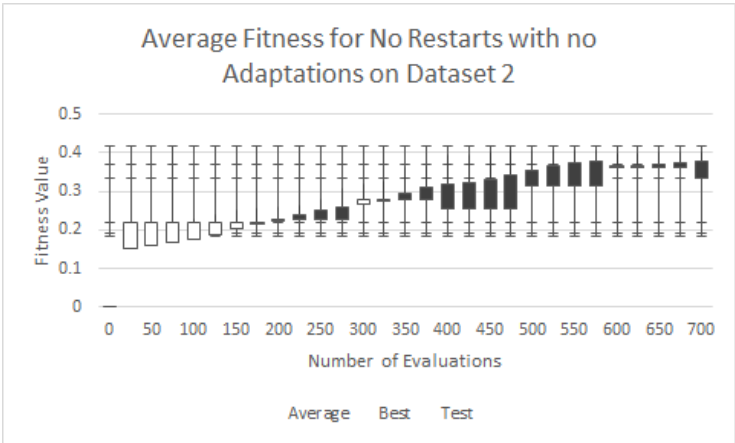
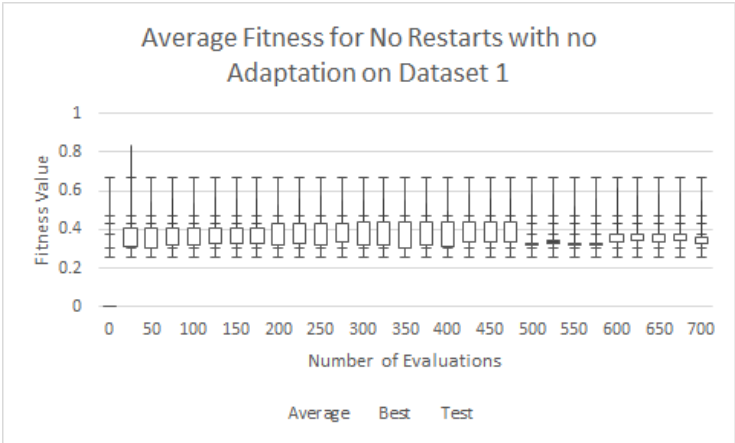
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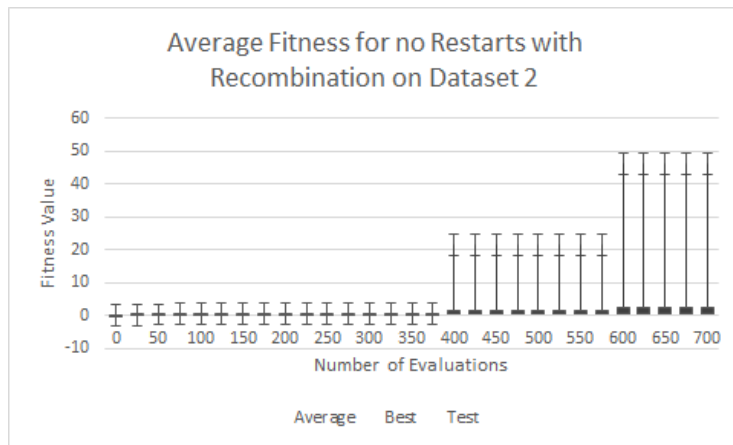
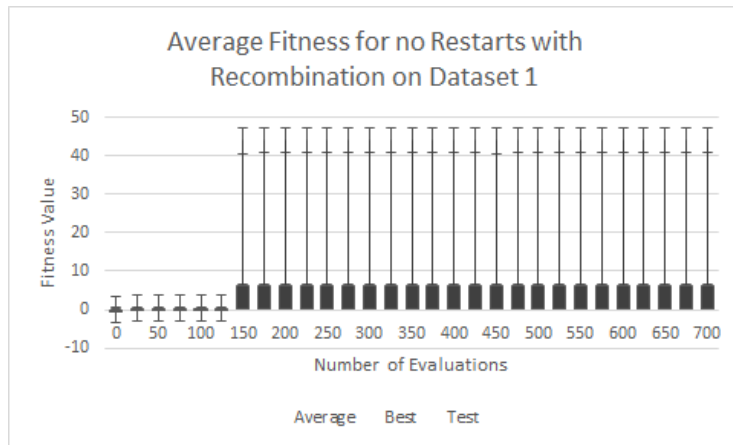
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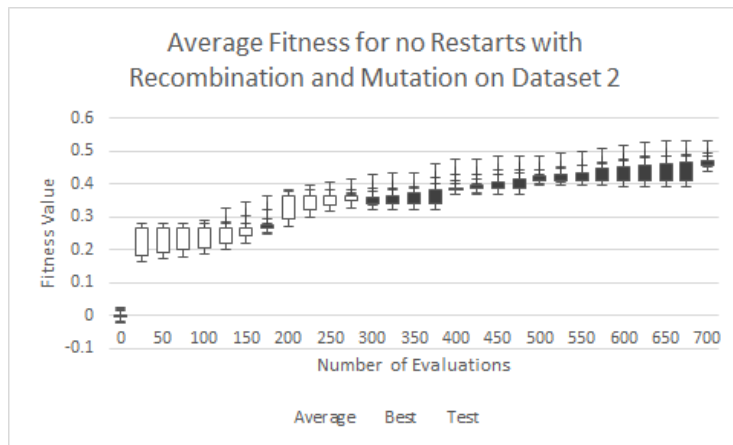
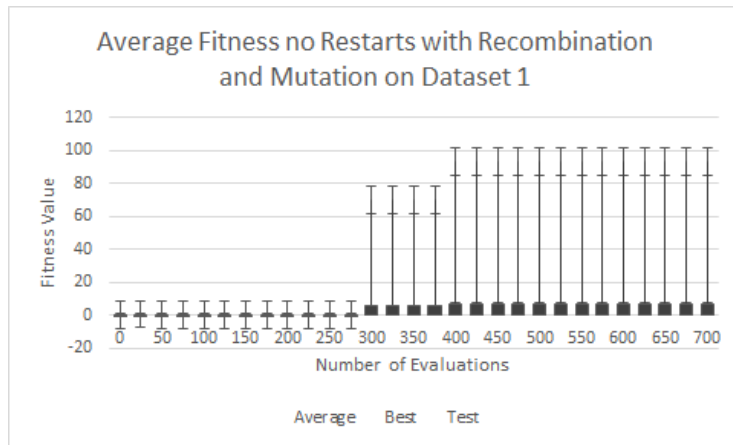
October 9, 2016

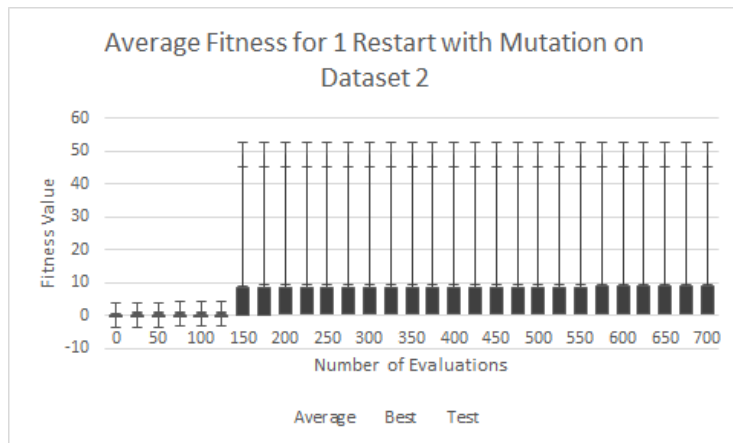
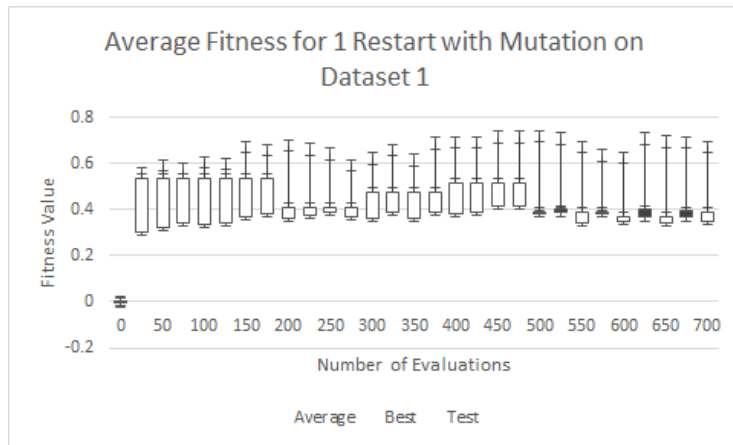
1 Plots

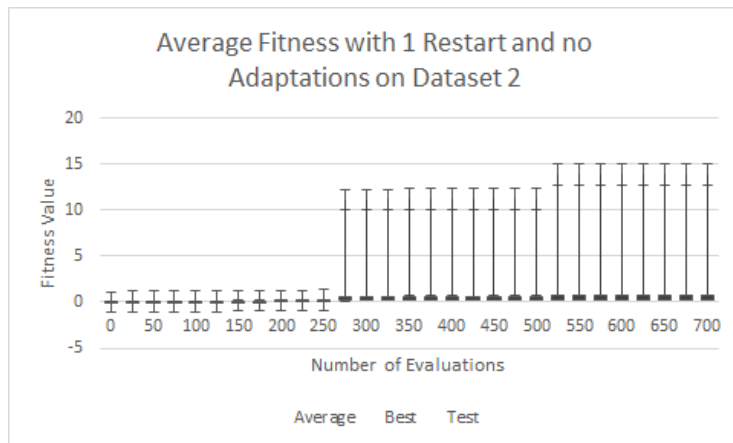
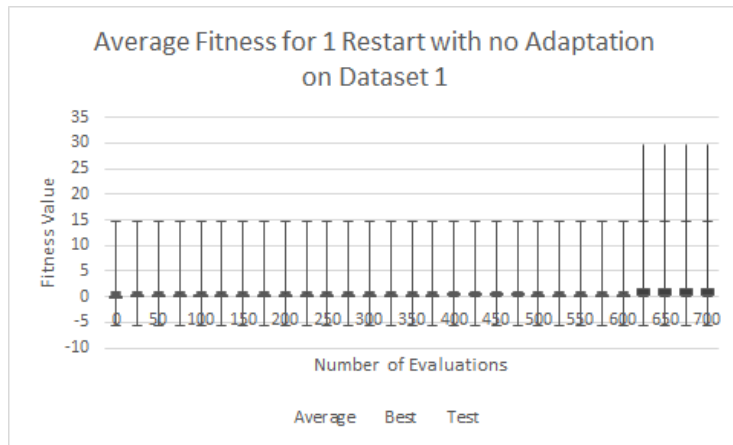


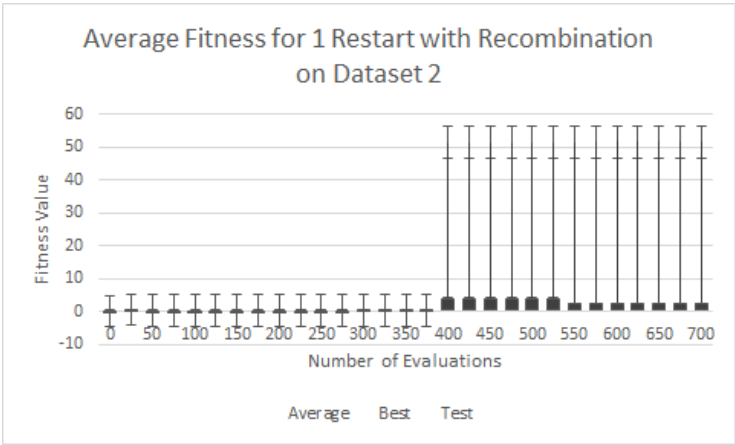
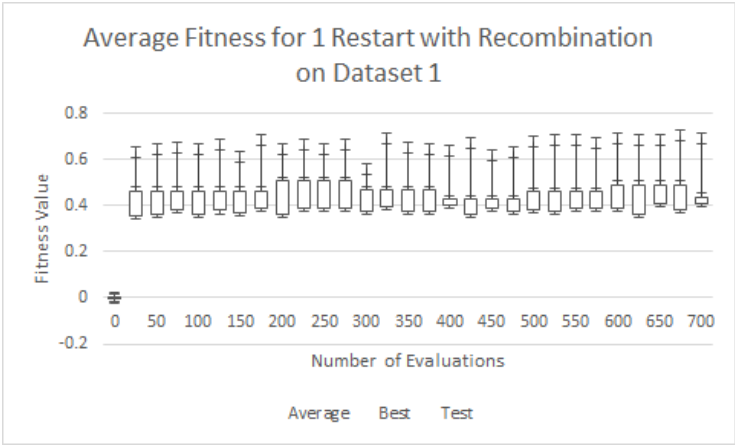


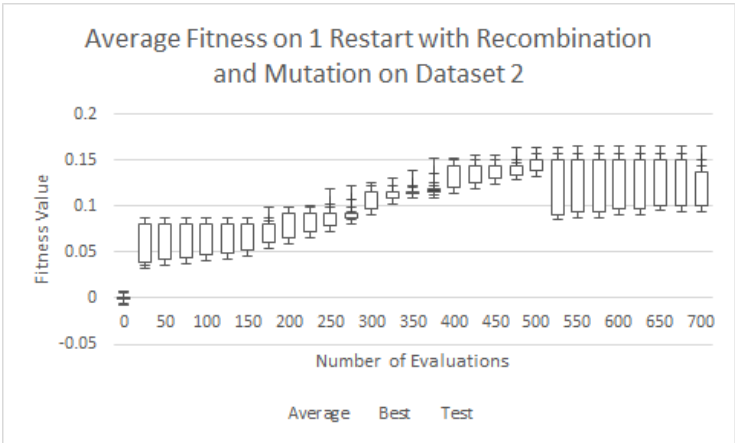
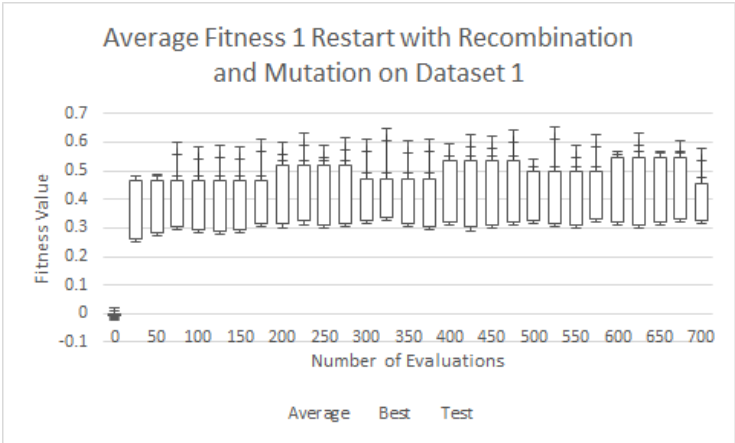


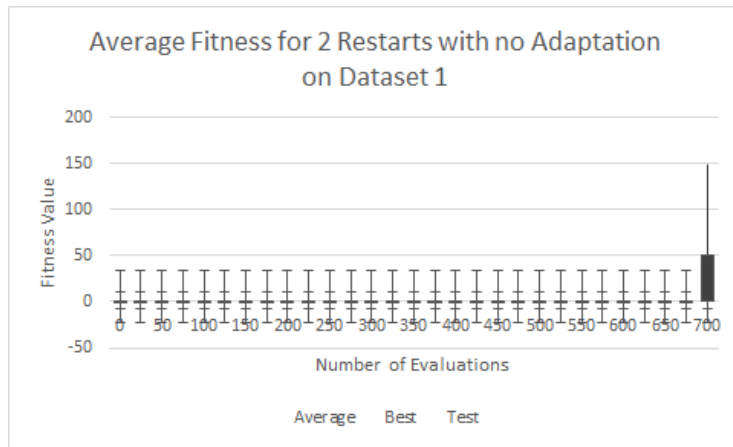












2 Experiment Comparisons

2.1 Control vs Mutation

2.1.1 Dataset 1

F-Test Two-Sample for Variances			t-Test: Two-Sample Assuming Unequal Variances		
	Variable 1	Variable 2		Variable 1	Variable 2
Mean	0.503786	0.570473	Mean	0.57047313	0.503785655
Variance	0.00047	0.003196	Variance	0.003195994	0.000470454
Observations	30	30	Observations	30	30
df	29	29	Hypothesized Mean Difference	0	
F	0.147201		df	37	
P(F<=f) one-tail	8.3E-07		t Stat	6.032288585	
F Critical	0.5374		P(T<=t) one-tail	2.83872E-07	
			t Critical one-tail	1.68709362	
			P(T<=t) two-tail	5.67744E-07	
			t Critical two-tail	2.026192463	

2.1.2 Dataset 1

F-Test Two-Sample for Variances			t-Test: Two-Sample Assuming Unequal Variances		
	Variable 1	Variable 2		Variable 1	Variable 2
Mean	0.338424	22.08547396	Mean	0.338423814	22.08547396
Variance	0.007548	6.179319026	Variance	0.007547765	6.179319026
Observations	30	30	Observations	30	30
df	29	29	Hypothesized Mean Difference	0	
F	0.001221		df	29	
P(F<=f) one-tail	0		t Stat	-47.88787882	
F Critical	0.5374		P(T<=t) one-tail	1.85188E-29	
			t Critical one-tail	1.699127027	
			P(T<=t) two-tail	3.70377E-29	
			t Critical two-tail	2.045229642	

The F-Test was used to compare the two configurations. The results of the F-Test showed that unequal variances should be assumed. After the t-test, it can be assumed that for dataset 1, the control was better with a 95% confidence interval. It can also be assumed that for dataset 2, the control was worse with a 95% confidence interval.

2.1.3 Dataset 2

2.2 Control vs 1-Elitism Restarts

2.2.1 Dataset 1

2.2.2 Dataset 2

2.3 Control vs 2-Elitism Restarts

2.3.1 Dataset 1

2.3.2 Dataset 2

2.4 1-Elitism Restarts vs 2-Elitism Restarts

2.4.1 Dataset 1

2.4.2 Dataset 2

3 Bonus 1

3.1 Control vs Mutation with 1-Elitism Restarts

3.1.1 Dataset 1

3.1.2 Dataset 2

3.2 Mutation vs Mutation with 1-Elitism Restarts

3.2.1 Dataset 1

3.2.2 Dataset 2

3.3 1-Elitism Restarts vs Mutation with 1-Elitism Restarts

3.3.1 Dataset 1

3.3.2 Dataset 2

4 Bonus 2

4.1 Control vs Recombination

4.1.1 Dataset 1

4.1.2 Dataset 2

4.2 1-Elitism Restarts vs Recombination with Restarts

4.2.1 Dataset 1

4.2.2 Dataset 2

4.3 Control vs Recombination with Mutation

4.3.1 Dataset 1

4.3.2 Dataset 2

4.4 1-Elitism vs Recombination with Mutation

4.4.1 Dataset 1

4.4.2 Dataset 2

4.5 Mutation vs Recombination with Mutation

4.5.1 Dataset 1

4.5.2 Dataset 2

4.6 Mutation vs Recombination with Mutation and 1-Elitism Restarts

4.6.1 Dataset 1

4.6.2 Dataset 2

4.7 Recombination vs Recombination with Mutation

4.7.1 Dataset 1

4.7.2 Dataset 2

4.8 Recombination vs Recombination with Mutation and 1-Elitism Restarts

4.8.1 Dataset 1

4.8.2 Dataset 2

5 Conclusion

In conclusion, it can be stated with 95% confidence that both of the evolutionary algorithms used are better than random search.