

### CONCLUSION AND FUTURE WORK

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#### 5.1 Conclusion

Both the PSO and genetic algorithm for solving travelling salesman problem on average yield same effectiveness (solution quality) but particle swarm optimization is more computationally efficient (uses less number of function evaluations than genetic algorithm).

The result of particle swarm optimization for solving travelling salesman problem vary greatly by changing particle count (number of routes) as well as the maximum velocity consider in a implementation.

More the number of particles results in less number of iteration to get the target value. Although increasing the velocity using the implementation we have done have very little effect.

Genetic algorithm involves three operators selection, crossover and mutation, however it depends very much on the way the problem is encoded and which crossover and mutation methods used.

Particle swarm optimization is a better approach than genetic algorithm for solving travelling salesman problem.

#### 5.2 Future Work

We will investigate other methods to compose velocities and heuristics under the PSO in future works. We will also explore the researches in variable velocities in future and we will also apply the proposed approach to the generalized TSP and to the Bi-objective TSP.

Work related to adding heuristics to genetic algorithm can be done in future to increase the probability of better result in less time.

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