Abstract

Ant Colonies have emergent problem solving nature like food foraging of Ants etc. Such problem solving nature of Ant Colonies have inspired emergence of efficient routing algorithms, especially in Ad Hoc Wireless Networks (AWN). They get inspiration from Ants which use simple rules with no direct communication and finds the shortest path by sensing the chemical called Pheromone. Ant Colony Optimization (ACO) is one such routing algorithm. ACO is Agent based routing algorithm and such agent based routing algorithms provide adaptive and efficient utilization of resources in a dynamic environment and also cater for load balancing and fault management. However there are few issues with ACO to be addressed while adapting ACO for routing on AWN. One of the Major issues is load balancing due to a problem called Stagnation. Stagnation occurs when all the packets starts travelling on the optimal path and loses packets due to congestion. There are many techniques adopted in ACO to alleviate this problem. This paper focuses on study of different techniques to address the stagnation problem.

References

- C Siva Ram Murthy & B S Manoj; Ad Hoc Wireless Networks Architectures and protocols; Pearson Education, 2nd Edition 2005
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- T Stutzle, H H Hoos, "Improvements on the ant system: Introducing the max min ant system, in : Third International Conference on Artificial Neural Networks and Genetic Algorithms, Springer Verlag, University of East Anglia, Norwich, 1998, pp 245-249
- Kuan Yew Wong, Phen Chiak See, "A New minimum pheromone threshold strategy(MPTS) for Max-min ant system", Applied Soft computing, Vol 9, 2009, pp 882-888
- David C Mathew, "Improved Lower Limits for Pheromone Trails in ACO", G
Efficient Pheromone adjustment techniques in ACO for Ad Hoc Wireless network

- Priyanka Sharma, Dr K Kotecha, "Optimization in stagnation avoidance of ACO based routing of Multimedia Traffic over Hybrid MANETs", International Journal of computer science and technology, IJCST, Issue 2, ISSN: 2229-4333(print), 0976-8491(online), 2011

**Index Terms**

Computer Science               Image Processing

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