A Mobile Ad-Hoc Network (MANET) [1] is a collection of wireless mobile nodes forming a temporary network without using centralized access points, infrastructure, or centralized administration.

Many researchers have developed proactive and reactive algorithms for MANETs. DSR and AODV are reactive algorithms establishing paths only when they are needed. When a node has some data to send to another node, it searches for a path by flooding the network with control messages. Their dissemination introduces some delay before data packets can be sent and reactive routing algorithms are inefficient when there is much continuous but intermittent traffic in the network. DSDV on the other hand, is a typical proactive routing algorithm. They prepare paths to all destination nodes beforehand and maintain them by exchanging control messages periodically. They require a network to carry a lot of control traffic into a network.
Swarm Intelligence (SI) [1] is an artificial intelligence technique based around on the study of collective behavior in decentralized, self-organized systems. Ant Colony Optimization is popular among other Swarm Intelligent Techniques. Ants-based routing algorithms have attracted the attention of researchers because they are more robust, reliable, and scalable than other conventional routing algorithms. Since they do not involve extra message exchanges to maintain paths when network topology changes, they are suitable for mobile ad-hoc networks where nodes move dynamically and topology changes frequently.

In this paper a detailed comparison of different Ant based algorithms is presented. The algorithms discussed here are Ant Based Control Routing, Ant Colony based Routing Algorithm Routing, Probabilistic Emergent Routing Algorithm, AntHocNet, AntNet.

Reference


Index Terms

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