

Enhancement of ant colony optimization in multi-robot source seeking coordination

ABSTRACT

This research presents dynamic approaches for swarm robotics system and subsequently achieve enhanced strategies to enhance equilibrium and optimize power usage. Method apply in progress of the project can be divided into hardware platform, control and optimization, and lastly measurement and analysis method. In hardware platform, the speed of rotation of the wheel is controlled for various movement such as direct motion and rotation in place. Optimization method is focused on ant colony optimization. The corrected equation for robot localization control provides more precise mathematical model for manipulating the robot motion. This research compared ACO, dynamic ACO and Dijkstra algorithm in simulated static condition. The result shows that Standard ACO outperforms others algorithm in static condition while Improved algorithm is best used in dynamic conditions.