

Decentralized control of swarm robots in unknown environment

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Abstract

In this project, we shall study and implement algorithms to achieve a coordinated control of a swarm of mobile robots in an unknown environment. We shall study the below mentioned techniques, with a major emphasis on *Null Space Behavioral approach (NSB)*; further, as an extension to our project, we shall study about the *Graph Theory based approach* for accomplishing the aforementioned objective. A decentralized version of NSB shall be exploited to drive a swarm of robots from an initial random configuration to a final target along with obstacle avoidance capability in an unknown environment. The control algorithms fit themselves in the following real life problems: demining, search and rescue, mapping, surveillance.