

学术探讨

基于局部传感和通讯的多机器人运动规划框架

焦立男, 唐振民

南京理工大学 计算机科学与技术学院 模式识别与机器智能研究所, 南京 210094

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摘要 在多机器人系统的研究中, 基于局部传感和通讯的系统需要特殊的设计。针对许多任务都需要的运动规划能力, 一个基于局部传感和通讯的完整框架在文中得到了描述和模拟实现。该框架包括环境模型、一个分布式架构、动态网络通讯模块和规划、协调算法; 动态网络通讯模块为协调提供了良好基础, 环境模型和规划、协调算法的设计都考虑到了局部传感和通讯的特殊性; 对于框架的验证, 提出了一个基于黑板架构的仿真模型并做出了实现。

关键词 [多机器人系统](#) [运动规划](#) [局部传感和通讯](#) [黑板架构](#)

分类号

Frame for multi-robot motion planning based on local sensing and communication

JIAO Li-nan, TANG Zhen-min

Institute of Pattern Recognition and Machine Intelligence, College of Computer Science and Technology, Nanjing University of Science and Technology, Nanjing 210094, China

Abstract

In the research of Multi-Robot Systems (MRS), MRS based on local sensing and communication require special designs. An integrated frame based on local sensing and communication is described and simulated for motion planning which is demanded by many Multi-Robot tasks. The frame includes an environmental model, a distributed architecture, a dynamic communication network, planning and coordination algorithms. The coordination of MRS is well grounded on the dynamic communication network, special particularities of local sensing and communication are considered in the designs of environmental model as well as algorithms of planning and coordination. As for the evaluation of the frame, a simulated model which is based on blackboard architecture is proposed and implemented.

Key words [MRS](#) [motion planning](#) [local sensing and communication](#) [blackboard architecture](#)

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通讯作者 焦立男 [E-mail: jiaoln@njust.edu.cn](mailto:jiaoln@njust.edu.cn)

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