

Action Acquisition of Multiple Intelligence Agents by Interacting with Real World

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In this research, the actions of our agents are to be generated by the interaction between the agents themselves and the world. As the requirements for the agents to accomplish tasks in the situations that human operator cannot directly teach how the tasks are to be done. In the situation, intelligence must be able to interact with the outside world and acquire the proper actions that lead to tasks accomplishment. Therefore, our intelligence agents are designed to be able to use only little local information in which to make the decisions to act.

- Map Building Operation by Multiple Agents (Fig. 1, Fig. 2)

In this research, we deal with problems of exploration and map building by multiple agents in real world. The tasks in the exploration and map-building mission are to be assigned equally to each agent to increase the efficiency of accomplishment^{1), 2)}.

- Acquisition of Multiple Objects' Re-arrangement process (Fig. 3, Fig. 4)

In this research, re-arrangement process is to be acquired by single agent during the interaction with multiple objects situation in real world.

Keywords: Exploration task, Rearrangement task, multiple mobile robots

References

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- 2) Yusuke Fukazawa, Chomchana Trevai, Hideo Yuasa, Jun Ota, Tamio Arai and Hajime Asama, Region Exploration Path Planning for a Mobile Robot Expressing Working Environment By Grid Points, Proc.2003 IEEE, Int. Conf. On Robotics and Automat., 2003, to appear



Fig. 1 Exploration task by multiple mobile robots

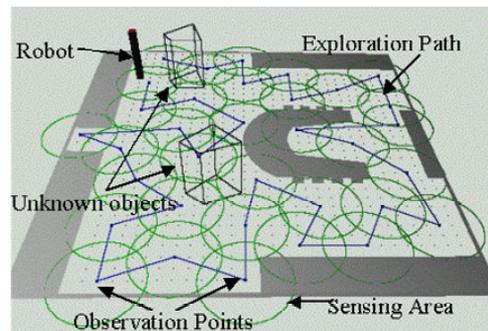


Fig. 2 Exploration of the environment which has intricate shape or curved line

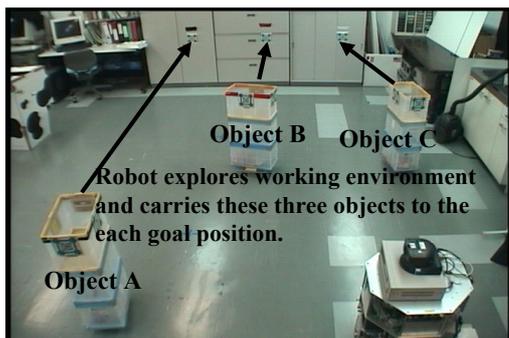


Fig. 3 Rearrangement task of multiple movable objects

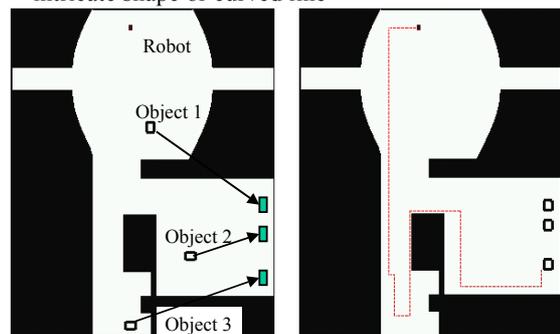


Fig. 4 Rearrangement task in the intricate environment (Left:initial state, Right:goal state)