(54) Title of the invention : INNOVATIVE APPLICATION OF AI TECHNIQUES IN ENHANCING THE EFFICIENCY AND EFFECTIVENESS OF ROBOTIC PATH PLANNING

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(57) Abstract :
In this paper, we address the challenge of optimizing robot path planning using an artificial intelligence algorithm. The primary goal is to develop an optimal strategy that maximizes the overall return. When the robot encounters a new state, it must choose and execute an action from a predefined set. To enhance the algorithm's performance, a search strategy is employed during action selection. A critical component of the robot's path planning system is the implementation of directional reference vehicle scheduling. Artificial intelligence algorithms are predominantly used in this domain. In this study, we utilize an AI algorithm to optimize the vehicle scheduling problem. The path variable is defined based on the planning node, and the sequence of delivery points that meet the delivery requirements is termed the legitimate sub-path. This sequence excludes any repeated planning points. The proposed algorithm significantly boosts the efficiency of multi-robot systems by reducing the number of explorations needed and accelerating the convergence process.

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