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Accelerated Method based on Reinforcement Learning and Case Base Reasoning in Multi agent Systems

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Abstract

In this paper, a new algorithm based on case base reasoning and reinforcement learning is proposed to increase the rate convergence of the reinforcement learning algorithms in multi-agent systems. In the propose method, we investigate how making improved action selection in reinforcement learning (RL) algorithm. In the proposed method, the new combined model using case base reasoning systems and a new optimized function has been proposed to select the action, which has led to an increase in algorithms based on Q-learning. The algorithm mentioned has been used for solving the problem of cooperative Markov's games as one of the models of Markov based multi-agent systems. The results of experiments have shown that the proposed algorithms perform better than the existing algorithms in terms of speed and accuracy of reaching the optimal policy.

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Index Terms

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Keywords

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