

要 旨

ターン制戦略ゲームにおける A*探索と UCT のハイブリッドアプローチ

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本研究では,TUBSTAP における UCT 探索を用いた AI について, マップの大きさなどから性能が低下する傾向がみられることに対して,A*探索とのハイブリッドアプローチによって性能の向上を目指した. 試合序盤では A*, 戦闘がおこる可能性がある場合には UCT を利用することで, UCT の性能が落ちる序盤に有利を作ることができ性能が向上すると期待されたが, 対戦実験ではよい結果を残さなかった. 実際の対戦の様子から, A*から UCT に切り替えたのちも UCT の動きが適切でなく, 戦闘がおこる試合中盤においても UCT の性能が良くないままという問題点が発見された.

キーワード ターン制戦略ゲーム, TUBSTAP

Abstract

Hybrid approach of A* search and Upper Confidence bounds applied to Trees in turn-based strategy game

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In this study, we aimed to improve the performance of AI using UCT search in TUBSTAP by using a hybrid approach with A* search, because the performance of UCT tends to deteriorate due to the size of the map. By using A* in the early stages of the game and UCT when there is a possibility of a battle, we expected to improve performance by creating an advantage in the early stages, when UCT's performance is declining, but the results were not good in the competitive experiments. However, the actual game revealed a problem: even after switching from A* to UCT, the UCT did not move properly, and the performance of the UCT remained poor even in the middle of the game, when the battle was taking place.

key words turn-based strategy game, TUBSTAP