

## عنوان مقاله:

Map Abstraction with Adjustable Time Bounds

## محل انتشار:

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## خلاصه مقاله:

The paper presented here addresses the problem of path planning in real time strategy games. We have proposed a new algorithm titled Map Abstraction with Adjustable Time Bounds. This algorithm uses an abstract map containing non-uniformly sized triangular sectors; the centroids of the sectors guide the path search in the game map. In a pre-processing step we calculate an upper and lower time limit to plan paths for a given two dimensional grid map that is known beforehand. Depending on the time limits, we vary the size of the sectors to save search time or to improve path quality. We have experimented using maps from commercial games such as Dragon's Age: Origins and Warcraft III. In the worst case MAAT returns paths that are 8% less optimal. MAAT has an expensive pre-processing step which ultimately lowers the overhead CPU time consumed during game play by 1.1 milliseconds.

## کلمات کلیدی:

Pathfinding, path-planning, map abstraction, hierarchical

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