A Review of Real-Time Strategy Game AI

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Abstract

This literature review covers AI techniques used for real-time strategy video games, focusing specifically on StarCraft. It finds that the main areas of current academic research are in tactical and strategic decision-making, plan recognition, and learning, and it outlines the research contributions in each of these areas. The paper then contrasts the use of game AI in academia and industry, finding the academic research heavily focused on creating game-winning agents, while the industry aims to maximise player enjoyment. It finds the industry adoption of academic research is low because it is either in-applicable or too time-consuming and risky to implement in a new game, which highlights an area for potential investigation: bridging the gap between academia and industry. Finally, the areas of spatial reasoning, multi-scale AI, and cooperation are found to require future work, and standardised evaluation methods are proposed to produce comparable results between studies.

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This paper presents an overview of the existing work on AI for real-time strategy (RTS) games. Specifically, we focus on the work around the game StarCraft.