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Analysis of different approaches to video game bots based on bot bowl competition

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The paper explores different solutions for implementing self-learning artificial intelligence (AI) competitive bots for the game Blood Bowl. The winners of the most of the previous competitions were scripted bots but in recent years bots based on machine learning started to outspace their competition. Blood Bowl is a two-player, turn-based, asymmetric board game that combines elements of American football with the Warhammer board game. Teams consist of eleven to sixteen players, each of them having varying configurations of five main statistics: move allowance, strength, agility, armor value, and passing. The main goal is to score a higher takedown number than the opponent. This paper's primary objective is to develop a sophisticated AI agent capable of participating in the Bot Bowl Tournament and competing against other state-of-the-art bots. The research focuses on exploring behavioral cloning solutions created by using an in-depth analysis of games played in previous tournaments to vastly improve both the win ratio and complexity of moves employed by the bot. Using wrappers and scripted actions enhances the efficiency and effectiveness of the AI's learning mechanisms. By leveraging insights acquired from past gameplay data and employing advanced machine learning techniques, this research seeks to contribute to the advancement of AI in competitive gaming environments.

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