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Current/Emerging Trends in Computer Science

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Project Two

The way a human would approach the treasure hunt game would be to take in the rules of the game then to attempt a strategy based on past experience and inference. My first intuition was to visualize the shortest path without regard for the obstacles. Then to mentally modify that path till it was avoiding all obstacles while keeping close to that original path. The intelligent agent is starting at the beginning and then using the policy built by the model to determine the best move step by step. My strategy could be similar to the policy that was derived from training the model but not likely. Each approach requires past knowledge but while I use knowledge from a variety of games and puzzles that might be similar the agent strictly uses past experience with this specific puzzle. I only needed one example to understand the game and then quickly developed a decent strategy while the agent to experiencing thousands of games to get to it’s current state. My strategy of the game can be easily transferred to variations in size, dimension, and rules to the game while the agent is bound. Any change to the game parameters and the policy developed will be almost useless.

The difference between exploitation and exploration hinges on the use of the current policy to make decisions in the current epoch. With exploitation the current policy is used to make decisions that are then graded and improved. This helps the model move along the gradient to a more accurate model. Exploration adds randomness in the decisions so that the model can get out of local maximums and increase learning speed. Finding the right balance of exploitation and exploration is important to efficiently training a model that finds a good fit.

References

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