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AlphaGo Assignment

1. Given the examples from the video, do you believe Alpha Go demonstrated the capacity for “creativity” or are the results simply procedural?

They are procedural, creativity defined is an original thought (google). A lot of go players make moves because "it felt right" computers cannot do that, yet. That is because it lacks "creativity" that original thought, there is no intuition behind it just probability. Deep neural networks aren't quite fully understood so I think it makes it hard to really compare the two right now. But with what we do know I think it is safe to say it is procedural. During the documentary AlphaGo made one move but I don't think it was "original" I think it just looked at the game differently then the way we see it.

2. From the information provided, is Alpha Go an “Agent” as it relates to the definition we’ve discussed? What evidence do you base your conclusion on?

AlphaGo is an agent, it has an environment which is the board and it has actuators which change the environment. When a move is made it calculates its next move it changes every time the opposing player places a piece because the piece being placed changes the environment on which it bases its next move. The long wait time is from it running through various possibilities. Calculating probability of win based off of XYZ move.

3. After seeing the impact of this project on the humans involved in the testing, what are the responsibilities of scientists and developers as it relates to building Algorithms/Ai/agents whose primary functions may directly compete with humans?

The ethical considerations are high. Go is a complex game and if they can "solve" Go then they can solve many other complex problems. Moving forward we need to keep in mind what the nature of the problem we are solving is as well as the consequences of the problem are. Letting it solve something like a power grid and distribution of energy (a random example) it could hallucinate like it did when Lee Sedol 9-dan won, potentially charging people lots of money which is an easy fix or doing something completely unintended.

4. How might we address the issue of human creativity and competition being infiltrated by Ai systems? How might this relate to Ai generated music or Art?

I think we start with education because people still don't understand what true "AI" is. People need to understand that it is just probability and statistics. I say let it play out just like Limewire and Napster with music. Everyone hated it and now everyone had no choice but to embrace it.

Same with Art, Its going to happen you might has well embrace it move on and focus on how to work with AI rather than going against it.

5. What are the crucial components of the Alpha Go internal decision making structure?
Name each and briefly describe the functions in the decision process.

It is a deep neural network which works similar to neurons in a human brain. The more it plays the more pathways "connect" sort-of. It calculates probability of winning after each move. It thinks 40-50 moves ahead at all times. The more games it plays the more it learns the probability of placing a piece because it evaluates previous games. With that being said there are two parts the rules it follows and the values of each move being placed based off of previous played games.