Thesis Project Portfolio

E-thello

(Technical Report)

Impact of Artificial Intelligence in Go Communities

(STS Research Paper)

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Sociotechnical Synthesis

Artificial Intelligence (AI) is said to bring a paradigm shift in the game of Go since the advent of AlphaGo and has indeed been proven to improve the performance of professional players. While, alongside the progress, there has been a notable observation of players' total reliance on mimicking AI strategy in training, as well as a growing number of illegal AI usage in professional games, a trend that indicated that human intelligence is gradually playing weaker role in the development of Go because of AI supremacy.

Illegal AI usage cases in professional games has been widely reported and studied to ensure the fair playground for players. However, few of the analyses delve beyond the cases themselves and are able to list out, explore and explain the underlying reasons why game of Go has been particularly vulnerable to this emerging technology. In this paper, I aim to move beyond specific cases by conducting a systematic study of the game, examining how AI technology interacts with and influences all aspects of the Go community.

To support the analysis, this paper draws evidence from a variety of reliable sources, including news reviews, scholarly works and interviews with professional Go players. The sources aim to provide a wide spectrum of perspectives, spanning from personal experiences to case studies, to help draw a comprehensive picture. These sources are then analyzed and framed by Actor-Network Theory, a Science, Technology & Society framework which treats the game of Go as a network of actors. I start by constructing this network and then introduce the new factor AI. My study mainly focuses on how this new factor interacts with and transforms the relationships of the existing factors within this network.

My analysis has indicated that both the gameplay dynamics in nature and the organizational structure of Go communities make the game susceptible to the influence of AI. The simplicity of game states and rules in Go allows people of all ages to quickly grasp the use of AI programs. Consequently, individuals may develop an overreliance on AI, as AI has effectively solved most traditional human strategies, players who adopt AI-like approaches tend to secure victory in professional games. This is worsened by the highly competitive nature of Go communities, where the fear of falling behind prompts players to set aside their personal feelings and follow the crowd. In turn, it diminishes players' control in the game, and due to the reliance on online unsupervised competitions in the professional Go, some individuals opt to solely rely on AI.

The paper concludes that AI is bringing a transformation in the game of Go by gradually replacing human strategies and taking over people's role in game development. It also raises challenges on game's reliance on online competitions. However, the influence of AI will likely remain confined to the professional competitive realm. For casual players, the primary objective is not merely to win but to engage in a mental dialogue with their opponent through the expression of their moves. With this mindset, individuals are more resistant to relying solely on AI.