

Kugutsu

Go programs grew stronger in leaps by Monte Carlo Tree Search (MCTS) and by Deep Convolutional Neural Network (DCNN). However, the use of these techniques make the details of the decision making process a blackbox, accessible only through indirect inference on the weighting, training data, etc.

Because of this lack of direct accessibility to the decision-making heuristic logic, the AI's based on MCTS and/or DCNN cannot be used on mission-critical purposes for their inability to 'guarantee' that the same mistake will not be made again.

In other words, when such AI makes a wrong decision, debugging or improvement process on the AI is just a guesswork to reduce the possibility of making the same mistakes. Recent developments in the strength of these Go AI's are mostly based on spending huge computing resources on this guesswork.

Programmers of nuclear missile launch control systems are quite aware of this limitation, however, future designers of those systems that handle life and death situations need to be strongly warned not to blindly trust MCTS or DCNN based AI's to avoid catastrophic accidents.

Kugutsu, originally based on GNUGo, has been in development for a long time without the use of MCTS or DCNN. Because it does not take these easy ways out for a strong Go paying AI, the level of strength is not up to par with the modern bots, but instead shows what can be done with the good old IF-THEN-ELSE logic, showing that MCTS and/or DCNN is not a necessity in building an AI to handle complex problems.