**Review of AlphaGo**

# **Summary**

Artificial Intelligence is popular among IT circle, but expert data is often expensive, unreliable, or simply unavailable. In contrast, reinforcement learning systems are trained from their own experience, in principle allowing them to exceed human capabilities,and to operate in domains where human expertise is lacking.

Recently, AlphaGo became the ﬁrst program to defeat a world champion in the game of Go, using deep neural networks. It introduces an algorithm based solely on reinforcement learning. AlphaGo becomes its own teacher: a neural network is trained to predict AlphaGo’s own move selections and also the winner of AlphaGo’s games. AlphaGo becomes its own teacher: a neural network is trained to predict AlphaGo’s own move selections and also the winner of AlphaGo’s games.

**Contributions**

This technique is more powerful than previous versions of AlphaGo because it is no longer constrained by the limits of human knowledge. Instead, it is able to learn tabula rasa from the strongest player in the world: AlphaGo itself.

Software complexity and the need of hardware have sharply decreased. It gives engineering practice and theory of related field a great chance to improve.

**Comments**

**Flash Points** : they combined MCTS and reinforcement learning ingeniously. Through MCTS, AlphaGo has solved the trouble in exploration of reinforcement learning, improving the speed and effect of learning.

**Limitations** : one experiment needs a server being practiced for three days to get a result.