



Transferable Reinforcement Learning for Board Games

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Abstract

The modern Reinforcement Learning has become widely interested recently, after the AlphaGo[1] became the first program to defeat a world champion in the game of Go. And by 2017, the AlphaGoZero[4] and AlphaZero[3] programs achieved superhuman performance in the game of Go and Chess, by solely trained from games of self-play which require no human knowledge. But in contrast, both AlphaGoZero and AlphaZero required extremely powerful processor as they need to random move in the early state of training which cost more expend. While in Computer Vision domain, we often use pretrained model from large dataset such as Imagenet[2] and retrain it for desired task which cost less time and achieved more accuracy than train it from scratch. In this thesis, we experiment a method to reuse the trained model of a game such as Othello, Connect4 or Gomoku and re-training with one different game by hoping it to be faster.

หนังสืออ้างอิง

- [1] David Silver, Aja Huang, C. J. M. A. G. L. S. G. v. d. D. J. S. I. A. V. P. M. L. S. D. D. G. J. N. N. K. I. S. T. L. M. L. K. K. T. G. D. H. Mastering the game of go with deep neural networks and tree search. *Nature* 529 (2016), 484--489.
- [2] Deng, J. e. a. Imagenet: A large-scale hierarchical image database.
- [3] Silver, D. e. a. Mastering chess and shogi by self-play with a general reinforcement learning algorithm.
- [4] Silver, D. e. a. Mastering the game of go without human knowledge. *Nature* 550, 354--359.