ANALYSIS OF REINFORCED NEURAL NETWORKS

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Abstract

In late 2017 DeepMind announced a groundbreaking system in a preprint [1] and the results were astonishing. The system was called AlphaZero and utilized *artificial neural networks* in order to teach itself the game chess without any proprietary knowledge, except the rules. After approximately 9 hours it was able to beat the strongest hand-crafted engines, such as Stockfish and it had learned centuries of human knowledge of chess. In this paper we aim to study the effectiveness of different *neural networks* such as the one used in AlphaZero. To be precise, we will analyze the efficiency of those networks in combination with varying *algorithms, optimizations, parameters, hyperparameters* and *architectures* applied to the classic game and variations of connect-four.

Keywords — Machine Learning, AI, Reinforcement Learning, Neural Network, Deep Learning

Contents

1 Motivation **2**

2 Introduction **3**
- 2.1 What is Reinforcement Learning . . . 3
- 2.2 What is Deep Learning . . . 3
  - 2.2.1 Artificial Neural Networks . . . 3
  - 2.2.2 Deep Reinforcement Learning . . . 3

3 Notation and Definitions **4**
- 3.1 Sigma Function . . . 4
- 3.2 Vector . . . 4
- 3.3 Matrix . . . 4
- 3.4 Derivative . . . 4
- 3.5 Gradient . . . 4

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2.2.2 Deep Reinforcement Learning

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3.3 Matrix

3.4 Derivative

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References

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