Saarland University

Department of Computational Linguistics

Software Project: **Neural Networks**

Tetris AI

Authors:

Florian Kandra?

Matriculation: xxxxxxx

Marlow Gabelman

Matriculation: xxxxxxx

Professor:

Prof. Dr. Dietrich Klakow

Sude Altinsoy

Matriculation: 7018880

Fidan Hasanova

Matriculation: xxxxxxx

Date of submission

Abstract

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Contents

1 Introduction (15p)

1.1 Tetris Introduction

1.2 Reinforcement learning

1.3 Reinforcement learning for Tetris

1.4 Computer Vision

Describe CV.

1.5 Computer Vision for Tetris

Describe why to use CV for Tetris. How to combine RL and CV.

2 Implementing RL with CV (10p)

2.1

Figure 1. The saarland uni logo.

3 DQN (7p)

3.1 Explain approach

3.2 Implementation process

3.3 Debugging

3.4 Finetuning

3.5 Results

3.6 Further Directions

4 PPO (7p)

4.1 Explain approach

4.2 Implementation process

4.3 Debugging

4.4 Finetuning

4.5 Results

4.6 Further Directions

Within a text, you can say that Lin and Pantel (2001) found out something. Or you can just state the thing, and then put the author in parentheses (see Szpektor et al., 2004).

5 Project Design (5p)

References

Lin, D. and Pantel, P. (2001). DIRT - Discovery of Inference Rules from Text. In *Proceedings of the ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD-01)*, pages 323–328, San Francisco, CA.

Szpektor, I., Tanev, H., Dagan, I., and Coppola, B. (2004). Scaling web-based acquisition of entailment relations. In *Conference on Empirical Methods in Natural Language Processing (EMNLP-04)*, pages 41–48, Barcelona, Spain.