

1-intro

Nathan Bittner

February 16, 2018

Contents

1	Introduction	2
1.1	What is RL - A branch of machine learning that deals optimizing the sequential decision-making of a goal-directed agent.	2
1.2	What is RL's relationship to Control Theory	2
1.3	Examples of RL	2
2	Definition of Key Ideas and	3
3	https://www.intechopen.com/books/reinforcement_learning	3
4	Universal reinforcement learning - vivek Farias	3
5	Exercises	3
5.1	Getting started with OpenAI	3
5.2	https://gym.openai.com/docs/	3
5.3	gridworld RL	3
5.4	silver lecture 1	3
5.5	awesome-rl	3
5.6	other learning resources	3
5.7	keras-rl	3
5.8	code for the sutton book	3
5.9	probably my favorite resource (slides)	3
5.10	genetic programming optimization	3
5.11	great resource on genetic algorithm learning	3
5.12	digestible deep Q learning implementation	3

1 Introduction

1.1 What is RL - A branch of machine learning that deals optimizing the sequential decision-making of a goal-directed agent.

1.2 What is RL's relationship to Control Theory

1.3 Examples of RL

- Video games
- Control operations in which we don't have a model of the system dynamics

2 Definition of Key Ideas and

3 [https://www.intechopen.com/books/reinforcement_](https://www.intechopen.com/books/reinforcement_learning)
learning

4 Universal reinforcement learning - vivek Farias

5 Exercises

5.1 Getting started with OpenAI

5.2 <https://gym.openai.com/docs/>

5.3 gridworld RL

5.4 silver lecture 1

5.5 awesome-rl

5.6 other learning resources

5.7 keras-rl

5.8 code for the sutton book

5.9 probably my favorite resource (slides)

5.10 genetic programming optimization

5.11 great resource on genetic algorithm learning

5.12 digestible deep Q learning implementation