

Machine Learning Workshop

Tic-Tac-Toe Project

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June 11, 2020

Contents

1	Introduction	1
1.1	Standard Tic-tac-toe	1
1.2	Our implementation	2

Introduction

1.1 Standard Tic-tac-toe

According to the definition in the Oxford Dictionary of English, Tic-tac-toe is a game in which two players seek to complete a row of either three noughts or three crosses drawn alternately in the spaces of a grid of nine squares.



Figure 1.1: A completed game of Tic-tac-toe¹.

And as it turns out, there are 255 168 possible games. So this means that, with the help of the reinforcement learning, a bot may train to mastery.

¹Source of the image: <https://en.wikipedia.org/wiki/Tic-tac-toe>

1.2 Our implementation

Our team decided to create a bot which would play this game but in an expanded version of it. The principal changes concern, inter alia:

- **The size of the grid could be infinite**
Infinite
- Another entry in the list

```
class MyClass(Yourclass):  
    def __init__(self, my, yours):  
        bla = '5 1 2 3 4'  
    print bla
```
