

Q-Learning Agent Report

Student Declaration of Authorship

Course code and name:	F29AI – Artificial Intelligence and Intelligent Agents
Type of assessment:	Individual
Coursework Title:	AI CW2 – Tic Tac Toe
Student Name:	Gauri Revankar
Student ID Number:	H00373987

Declaration of authorship. By signing this form:

- **I declare** that the work I have submitted for individual assessment OR the work I have contributed to a group assessment, is entirely my own. I have NOT taken the ideas, writings or inventions of another person and used these as if they were my own. My submission or my contribution to a group submission is expressed in my own words. Any uses made within this work of the ideas, writings or inventions of others, or of any existing sources of information (books, journals, websites, etc.) are properly acknowledged and listed in the references and/or acknowledgements section.
- I confirm that I have read, understood and followed the University's Regulations on plagiarism as published on the [University's website](#), and that I am aware of the penalties that I will face should I not adhere to the University Regulations.
- I confirm that I have read, understood and avoided the different types of plagiarism explained in the University guidance on [Academic Integrity and Plagiarism](#)

Student Signature (*type your name*): Gauri Revankar

Date: 30/11/2022

Against Defensive Agent

Against Defensive Agent:
Playing move: X(1,0)

```
| | | |
|X| | |
| | | |
```

Playing random move
Playing move: O(2,2)

```
| | | |
|X| | |
| | |O|
```

Playing move: X(2,0)

```
| | | |
|X| | |
|X| |O|
```

Playing defensive move
Playing move: O(0,0)

```
|O| | |
|X| | |
|X| |O|
```

Playing move: X(1,1)

```
|O| | |
|X|X| |
|X| |O|
```

Playing move: X(2,2)

```
|X| | |
|X| |O|
|O| |X|
```

Playing defensive move
Playing move: O(1,1)

```
|X| | |
|X|O|O|
|O| |X|
```

Playing move: X(0,2)

```
|X| |X|
|X|O|O|
|O| |X|
```

Playing defensive move
Playing move: O(0,1)

```
|X|O|X|
|X|O|O|
|O| |X|
```

Playing move: X(2,1)

```
|X|O|X|
|X|O|O|
|O|X|X|
```

It's a draw.

Wins: 25 Losses: 0 Draws: 25

Against Random Agent

Against Random Agent:
Playing move: X(2,0)

```
| | | |
| | | |
|X| | |
```

Playing move: O(0,1)

```
| |O| |
| | | |
|X| | |
```

Playing move: X(1,0)

```
| |O| |
|X| | |
|X| | |
```

Playing move: O(1,2)

```
| |O| |
|X| |O|
|X| | |
```

Playing move: X(0,0)

```
|X|O| |
|X| |O|
|X| | |
```

X won!
Playing move: X(2,0)

X won!
Playing move: X(2,0)

```
| | | |
| | | |
|X| | |
```

Playing move: O(0,1)

```
| |O| |
| | | |
|X| | |
```

Playing move: X(1,0)

```
| |O| |
|X| | |
|X| | |
```

Playing move: O(2,2)

```
| |O| |
|X| | |
|X| |O|
```

Playing move: X(0,0)

```
|X|O| |
|X| | |
|X| |O|
```

X won!
Wins: 49 Losses: 0 Draws: 1

Against Aggressive Agent

Against Aggressive Agent:
Playing move: X(0,0)

X		

Playing move: O(1,2)

X		
		O

Playing move: X(1,0)

X		
X	O	

Playing move: O(2,0)

X		
X	O	
O		

Playing move: X(2,2)

X		
X	O	
O	X	

Playing move: O(2,1)

Playing move: X(0,0)

X		

Playing move: O(1,1)

X		
	O	

Playing move: X(1,0)

X		
X O		

Playing move: O(1,2)

X		
X O O		

Playing move: X(2,0)

X		
X O O		
X		

X won!

Wins: 49 Losses: 0 Draws: 1