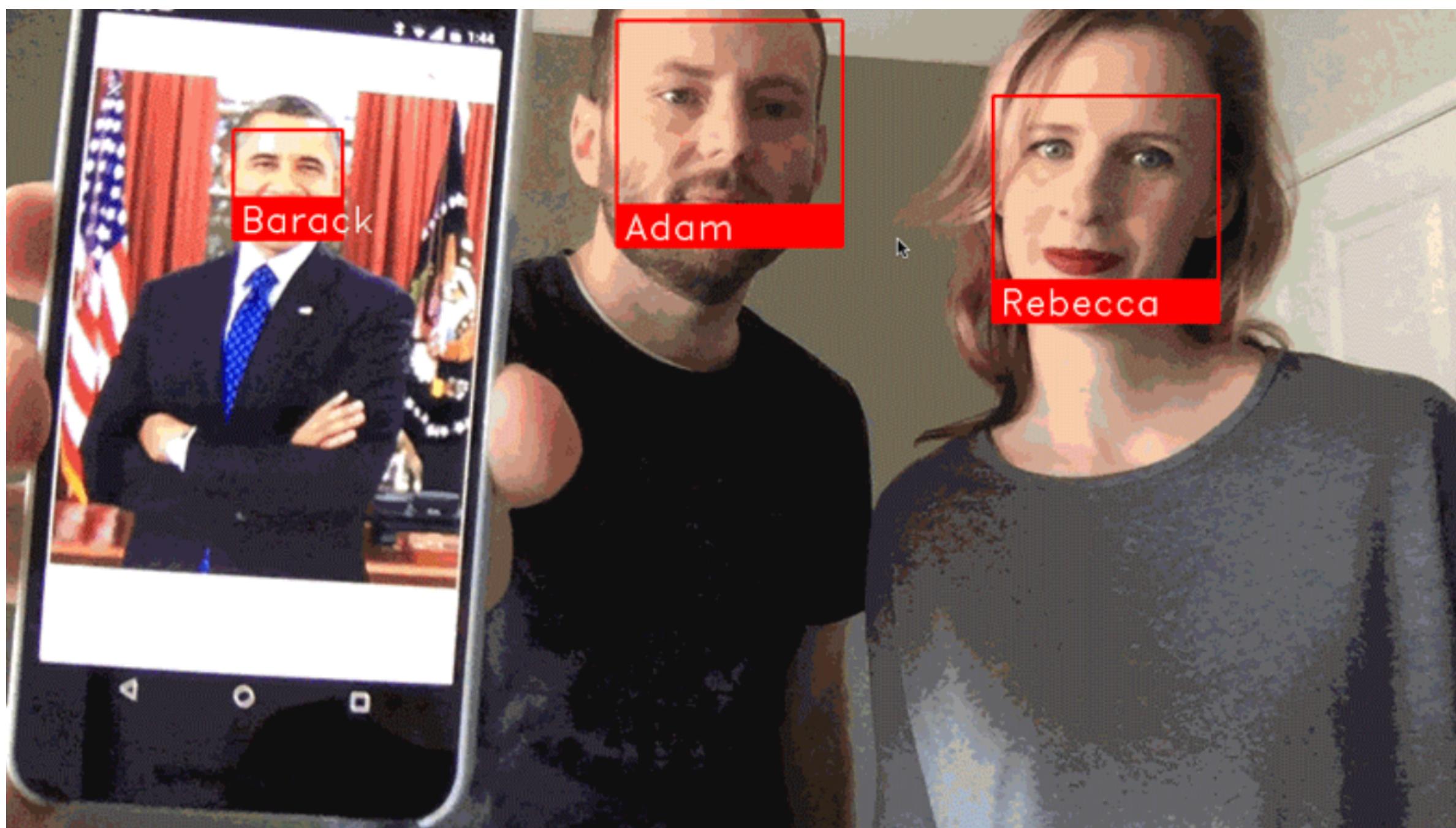


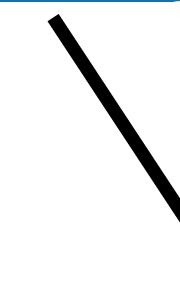
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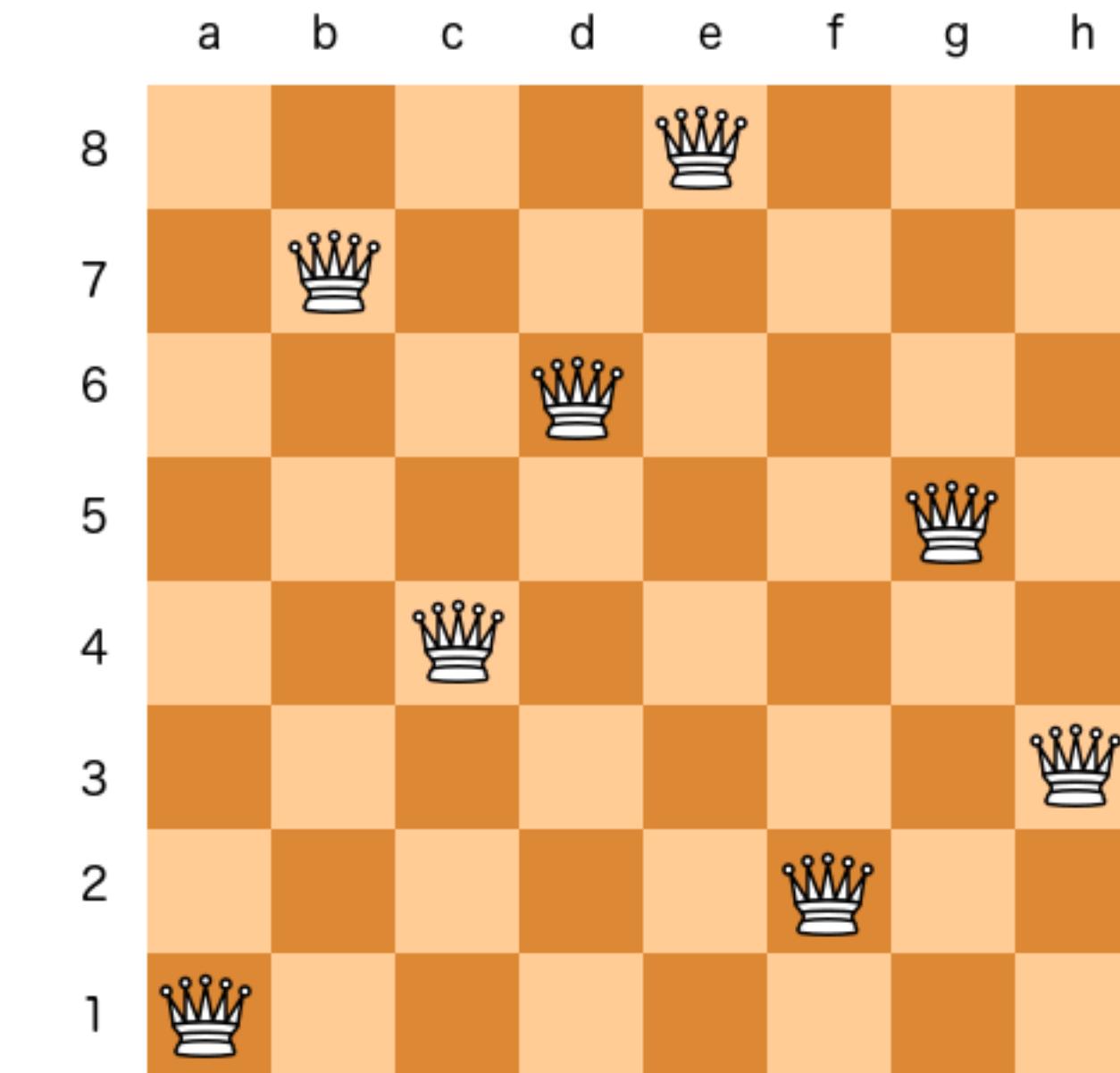
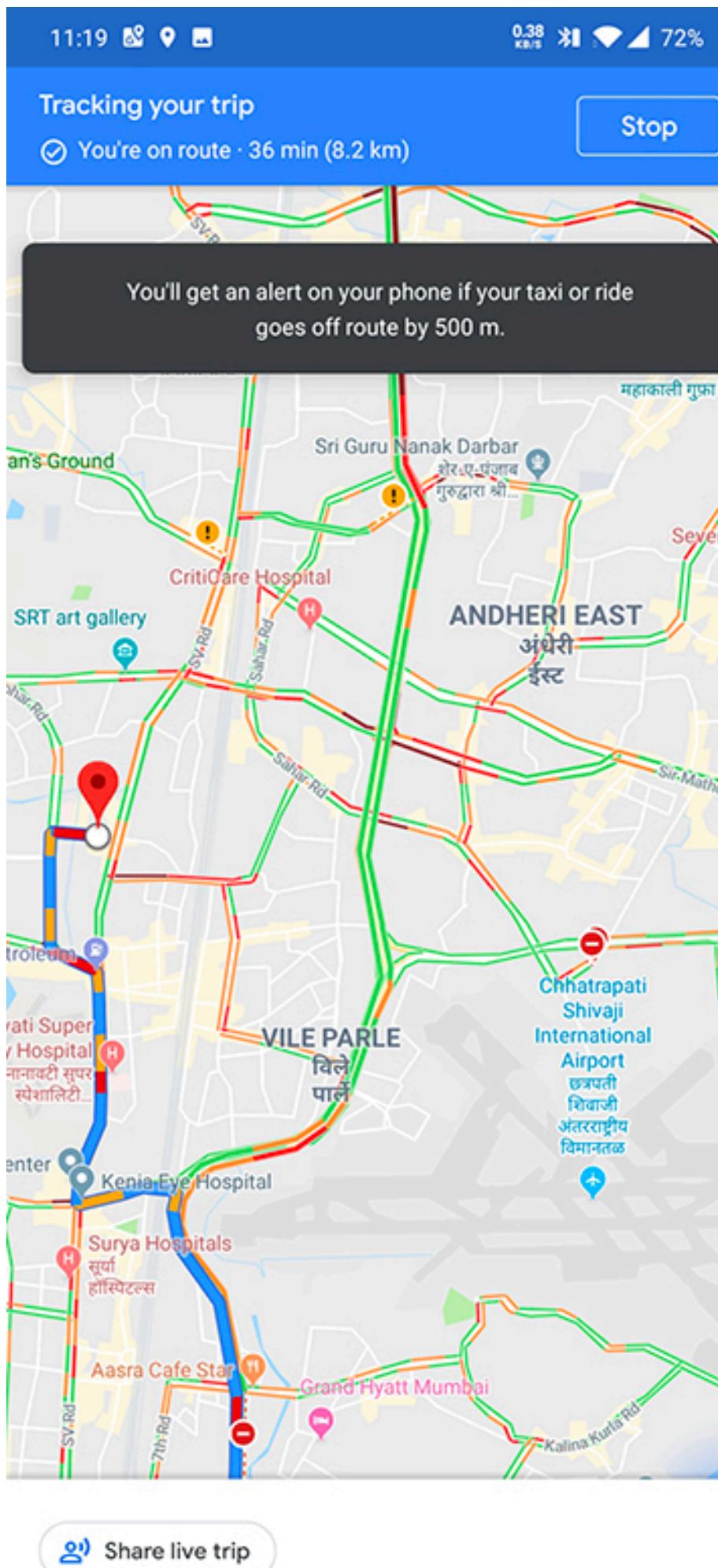
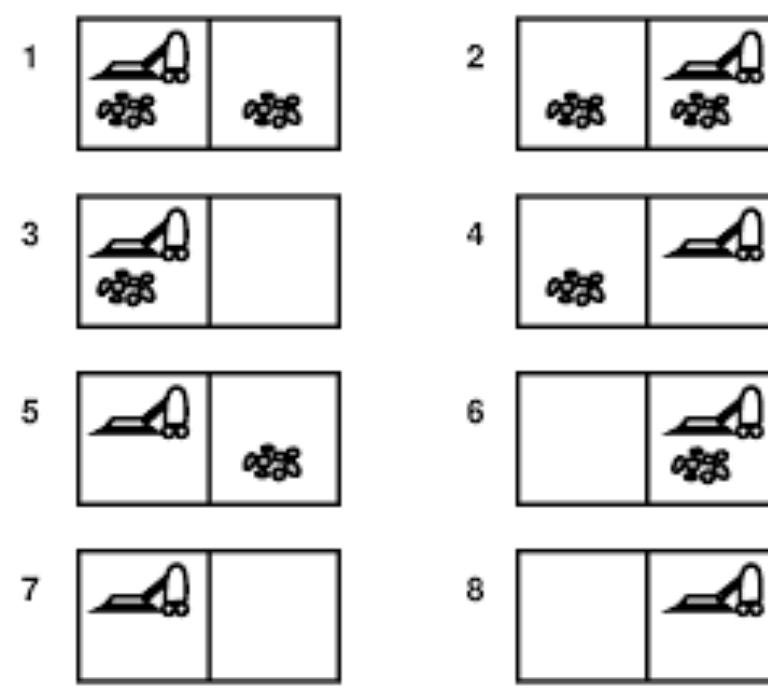
Fábrício Barth, Ph.D.



Agente Autônomo



Algoritmos de busca



```
(base) → search git:(master) ✘ python3 N_QueensProblem.py
Busca Subida da Montanha
Initial state with h = 7.0
[[0. 0. 0. 0. 0. 0. 1.]
 [0. 0. 0. 1. 0. 0. 0.]
 [1. 0. 0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 1. 0. 0.]
 [0. 1. 0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0. 1. 0.]
 [0. 0. 1. 0. 0. 0. 0.]]
Final state with h = 0
Duration in seconds = 51.8755247592926
```

```
class N_QueensProblem(State):

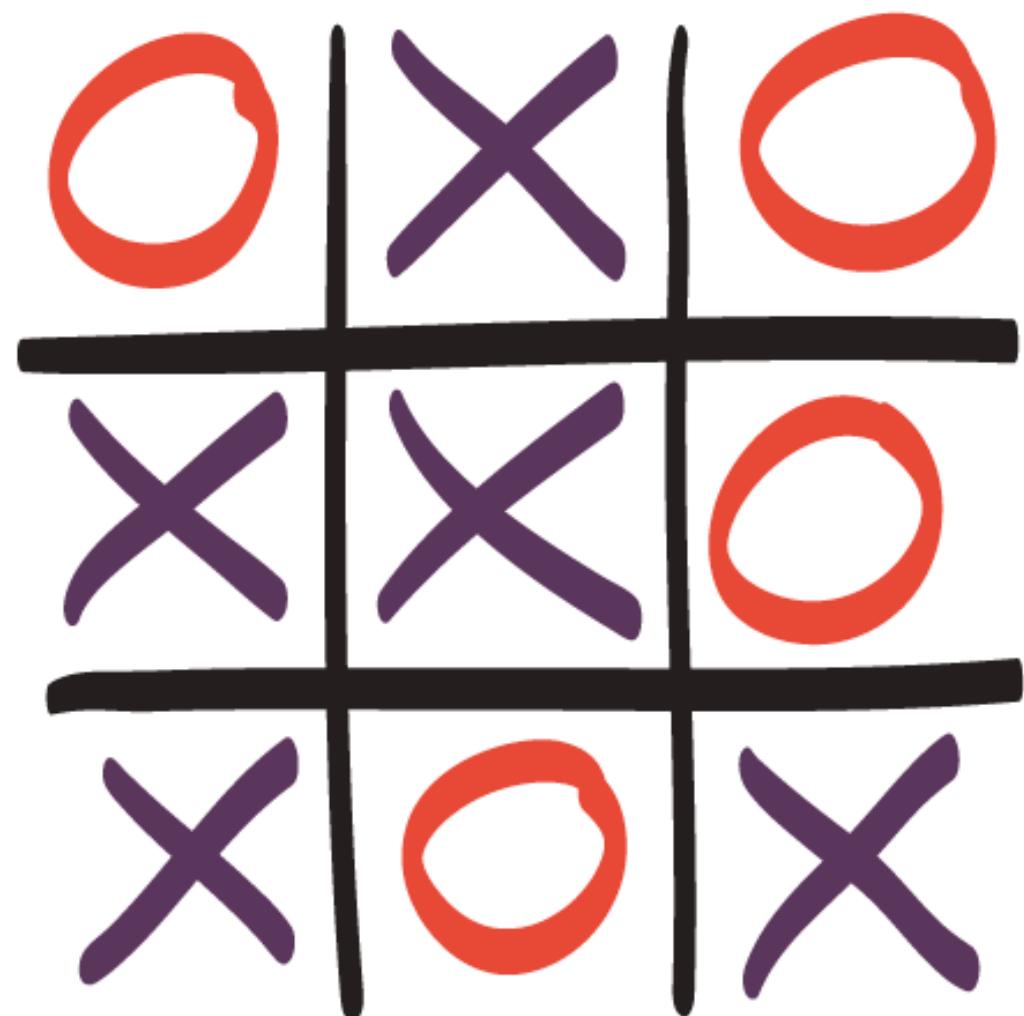
    def __init__(self, size, board):
        self.size = size
        self.board = board

    def env(self):
        return self.board

    def sucessors(self):
        sucessores = []
        for i in range(0, self.size):
            for j in range(0, self.size):
                if(self.board[i][j] == 1):
                    #move up
                    if((i - 1) >= 0 and self.board[i-1][j] == 0):
                        temp = self.board.copy()
                        temp[i][j] = 0
                        temp[i-1][j] = 1
                        sucessores.append(N_QueensProblem(self.size, temp))
                    #move down
                    if((i + 1) < self.size and self.board[i+1][j] == 0):
                        temp = self.board.copy()
                        temp[i][j] = 0
                        temp[i+1][j] = 1
                        sucessores.append(N_QueensProblem(self.size, temp))
                    #move left
```

Agente
Autônomo

Ambientes
competitivos



```
[[0. 0. 0. 0. 0. 0. 0. 0.]  
[0. 2. 0. 0. 0. 0. 0. 0.]  
[0. 2. 1. 0. 0. 0. 0. 0.]  
[0. 2. 1. 0. 0. 0. 0. 0.]  
[0. 1. 2. 2. 0. 1. 0. 0.]  
[0. 1. 2. 2. 1. 1. 0. 0.]
```

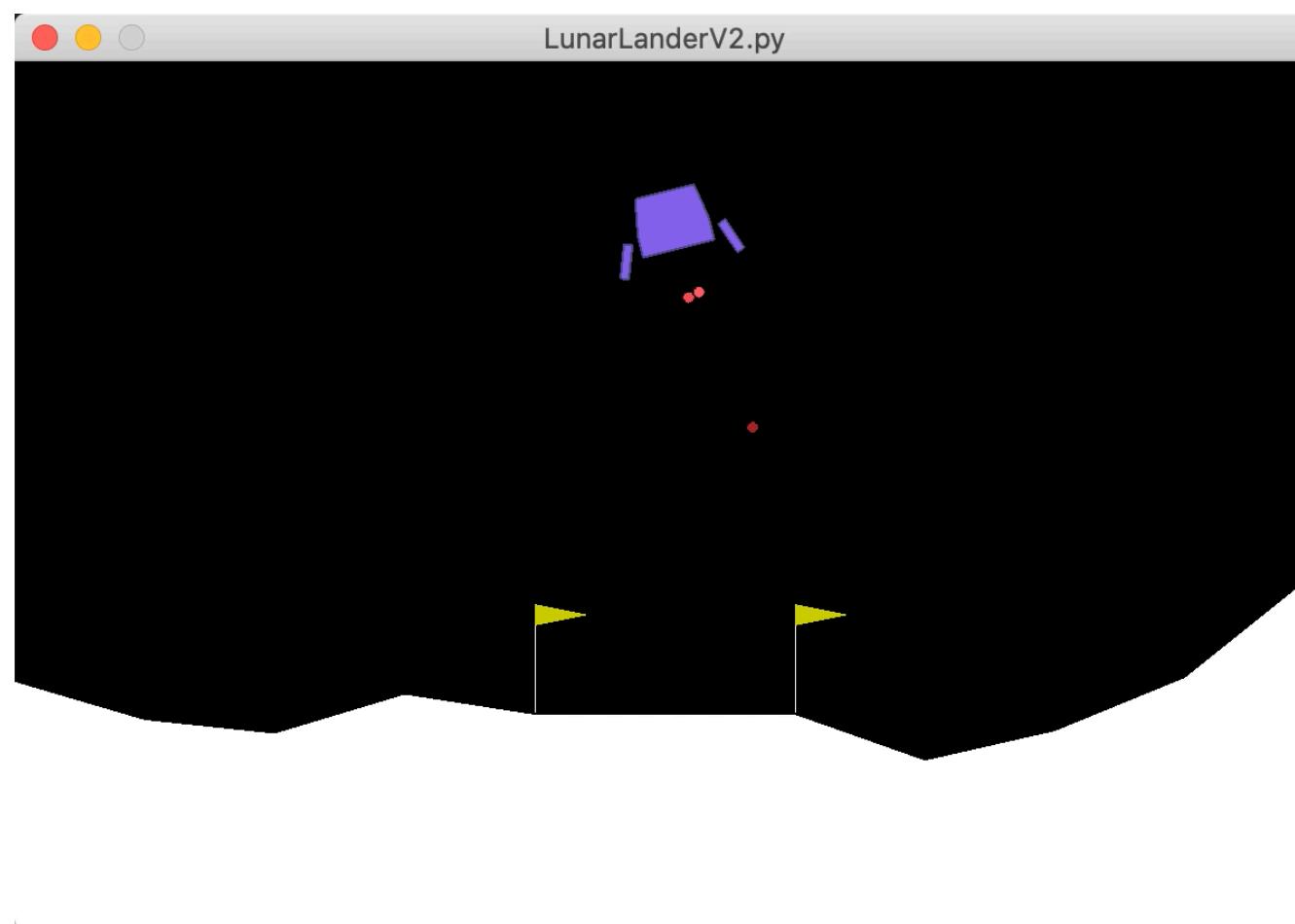
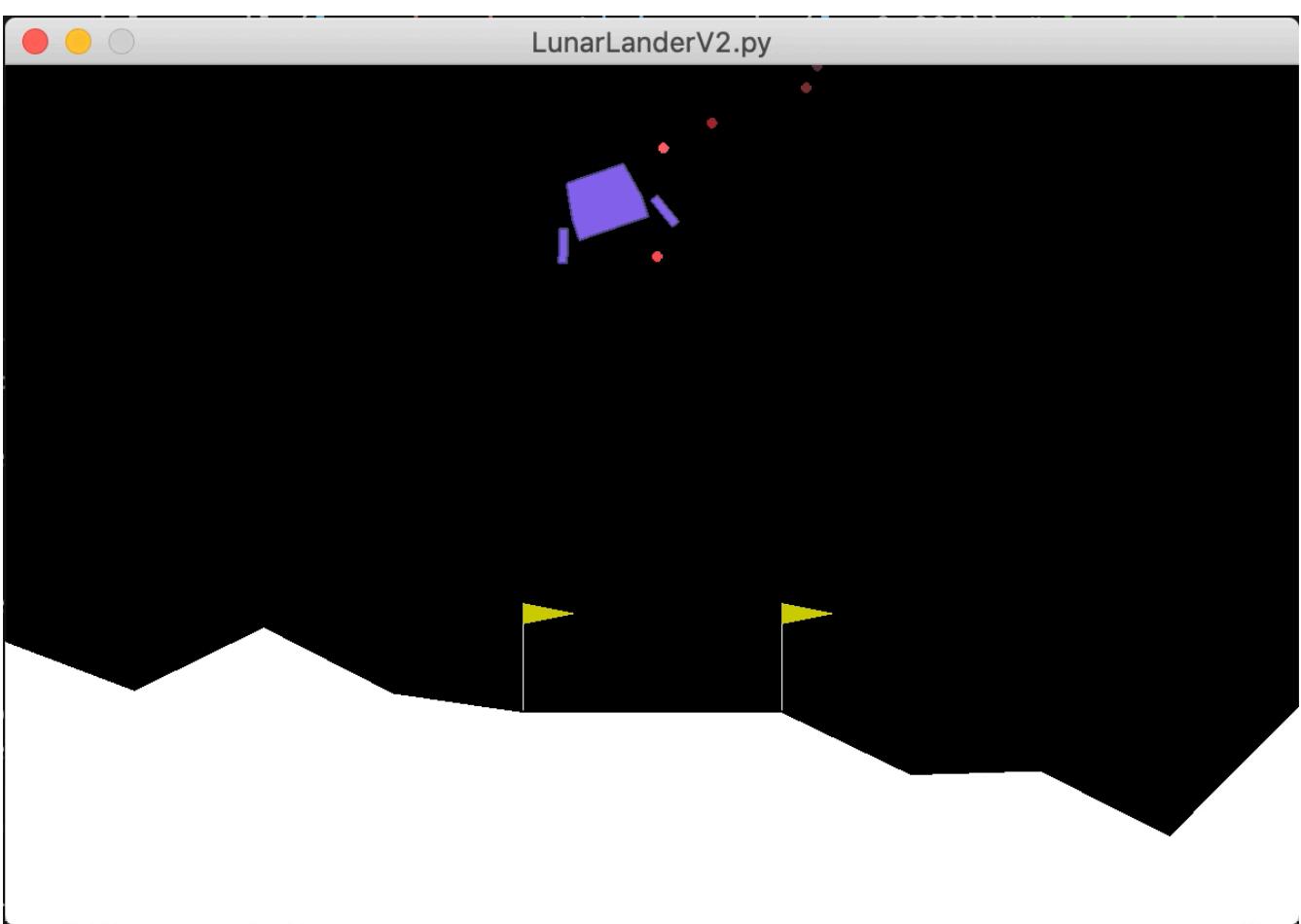
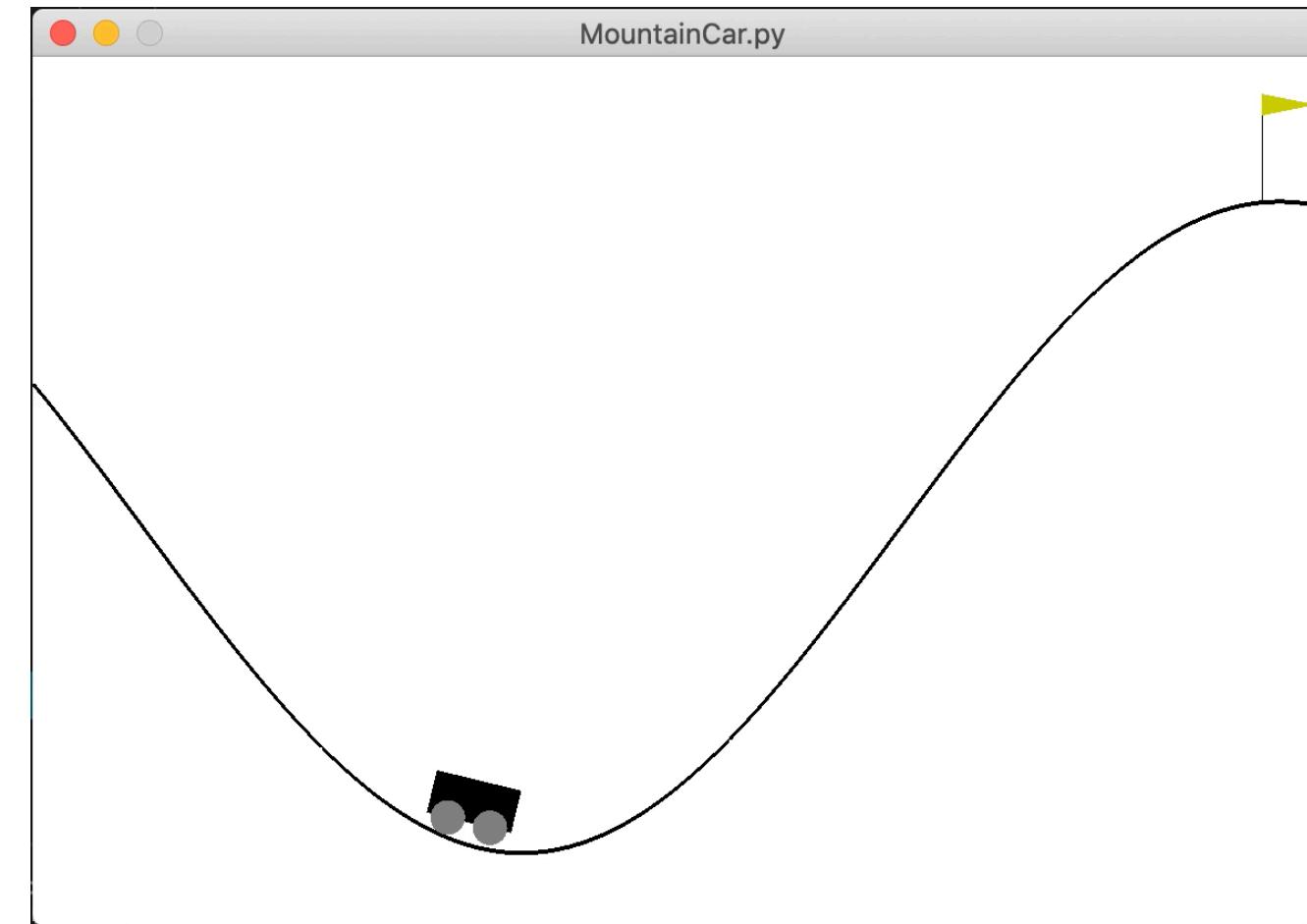
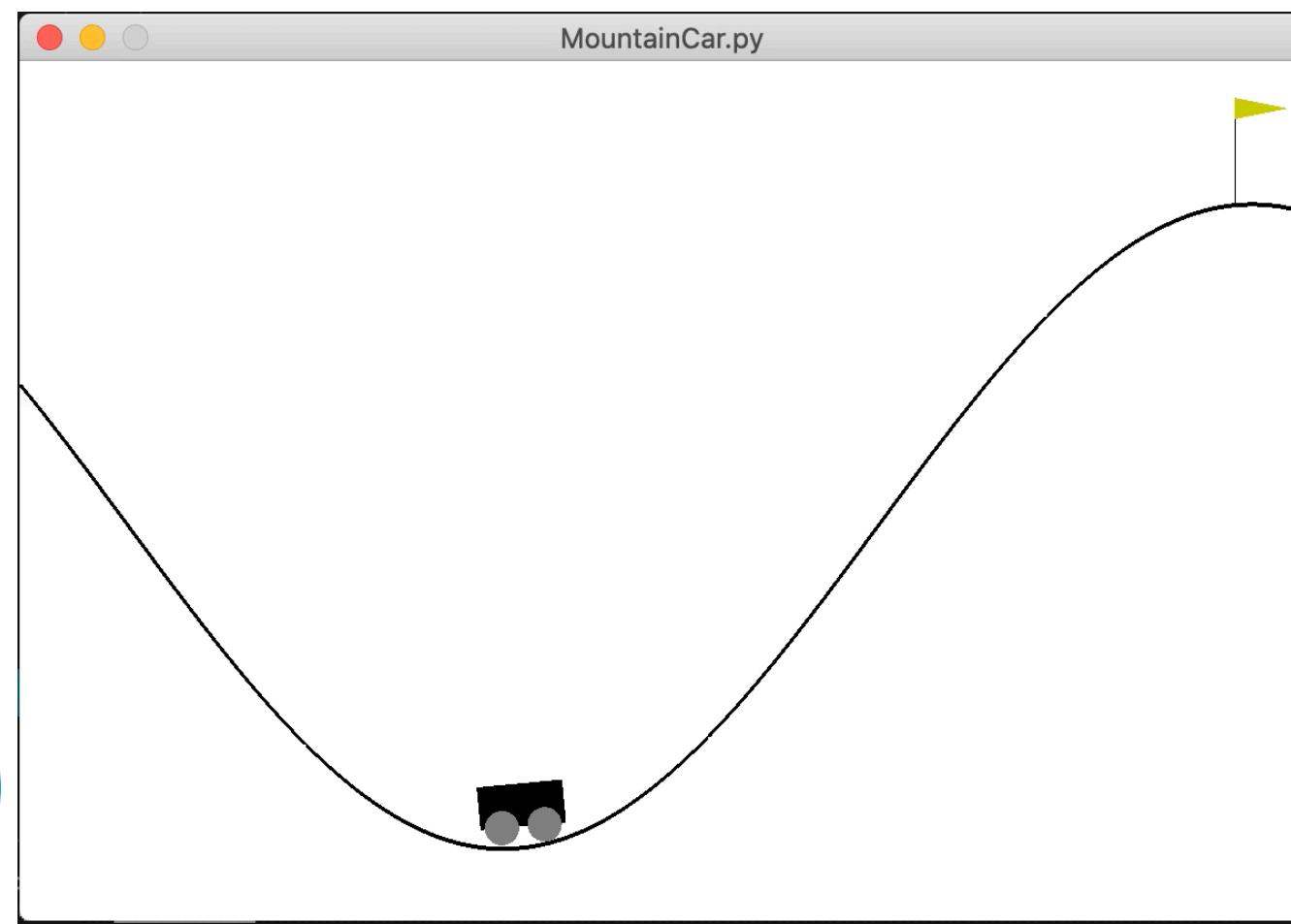
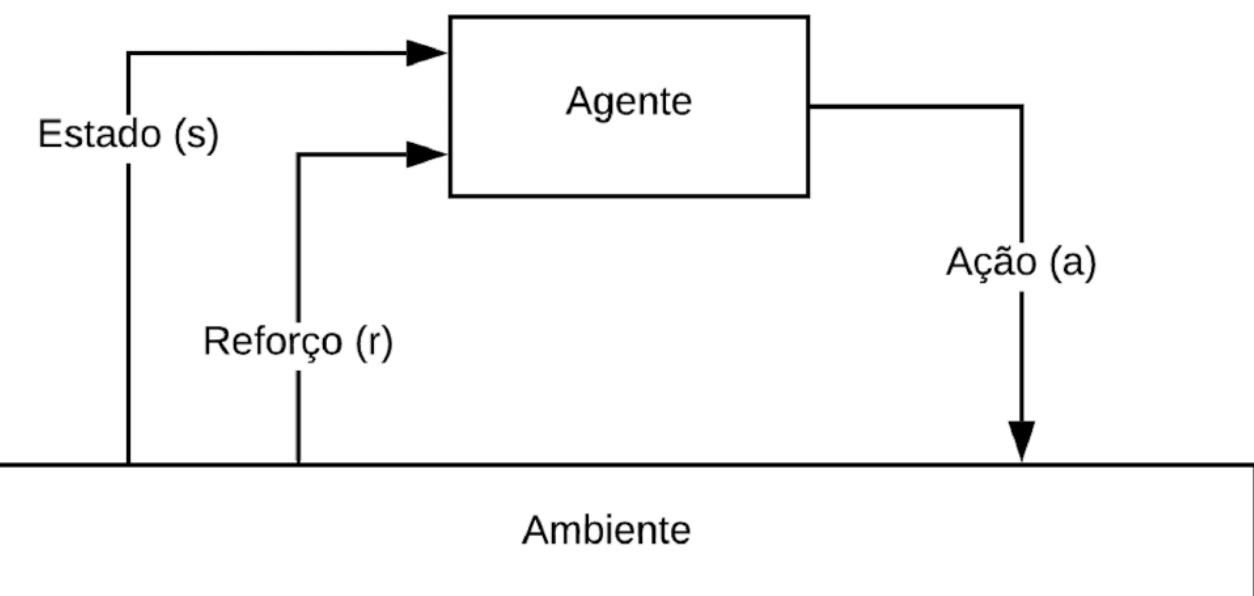
```
[[0. 0. 0. 0. 0. 0. 0. 0.]  
[0. 2. 1. 0. 0. 0. 0. 0.]  
[0. 2. 1. 0. 0. 0. 0. 0.]  
[0. 2. 1. 0. 0. 0. 0. 0.]  
[0. 1. 2. 2. 0. 1. 0. 0.]  
[0. 1. 2. 2. 1. 1. 0. 0.]
```

```
[[0. 2. 0. 0. 0. 0. 0. 0.]  
[0. 2. 1. 0. 0. 0. 0. 0.]  
[0. 2. 1. 0. 0. 0. 0. 0.]  
[0. 2. 1. 0. 0. 0. 0. 0.]  
[0. 1. 2. 2. 0. 1. 0. 0.]  
[0. 1. 2. 2. 1. 1. 0. 0.]
```

Player Daniel/Lucas is the winner!

Agente
Autônomo

Aprendizagem
por reforço



<https://github.com/fbarth/ai-espm>

github.com/fbarth/ai-espm

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fbarth concurrent version of grid search for q-learning	7cb8e45 on Sep 13	160 commits
docs Atualizacao das referencias	4 months ago	
games apenas colocando nome dos autores dos jogadores de connect-4	5 months ago	
reinLearn concurrent version of grid search for q-learning	last month	
search initial examples about reinforcement learning	6 months ago	
.gitignore tudo funcionando. exceto a concorrencia para o gridsearch e o exem...	2 months ago	
README.md minor changes	17 months ago	

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Code for the Artificial Intelligence course

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Languages

Jupyter Notebook 89.2% Python 10.8%

README.md

Code for Artificial Intelligence course

I am using this project to support the exercises in an Artificial Intelligence course that is part of undergraduate courses at [ESPM](#). The topics discussed in this A.I. course are:

1. Artificial Intelligence Introduction;
2. Intelligent Agents;
3. Solving Problems by Searching;
4. Informed Search Methods;
5. Game Playing, and;
6. Reinforcement Learning (I present in this course the concept of Learning from Observations, Supervised Learning and Unsupervised Learning. However, I have a specific course to discuss those topics. You can access this material [here](#)).