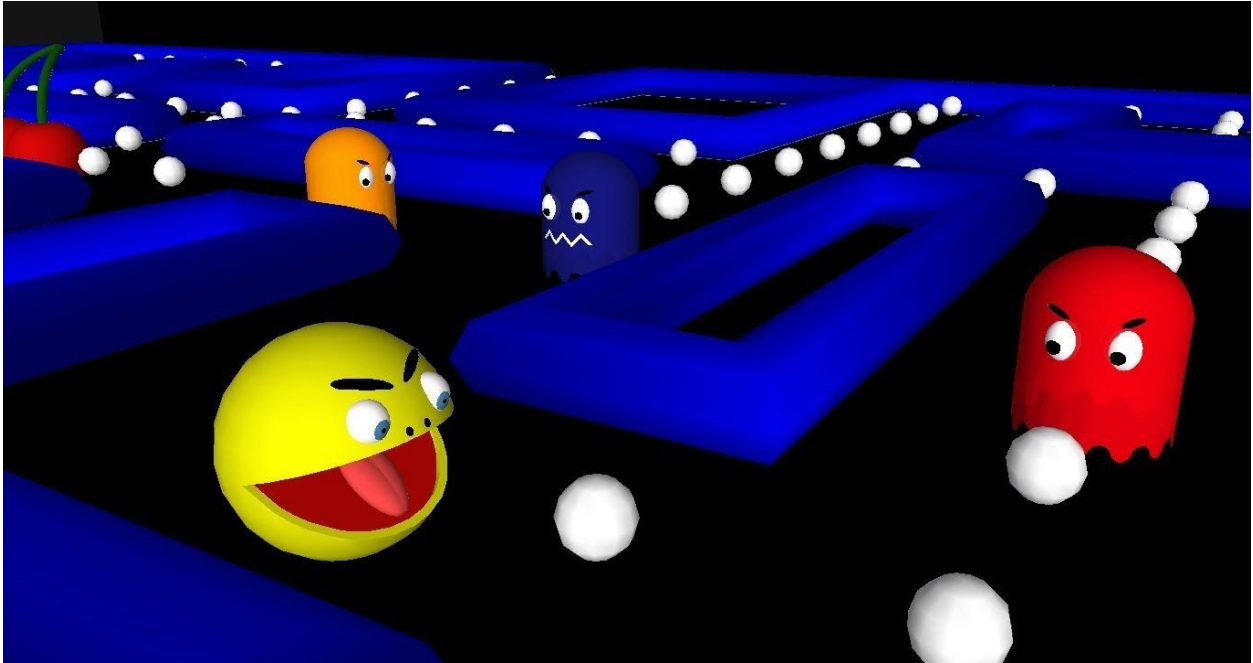


AI Contest



We all know pacman right ? That yellow one who runs away from the ghosts and collects coins.

We all played this classic game in our childhood. We chose the path that would allow us to stay away from the ghosts and also collected coins. Sometimes we'd obtain power ups that'll allow us to eat the ghosts instead of running away from them. The game is over when all the coins are acquired.

You played this game with your intelligence. But can you develop an intelligent agent to play the game for you ?

This is your challenge for the contest. You need to design an AI that'd play the pacman game. It'll be the pacman and it'll have to follow the path that not only maximizes the coin gain but also is safe from the ghosts.

But there is no rule that there should be only one pacman right ? So in our game there are actually two pacman. Two opponents will have to control the two pacmans. They will each try to collect the maximum number of coins.

So you'll be given a map, with some coins and ghosts. The two pacman will start from two opposite ends of the map. The entire arrangement will be symmetric in such a way that no player will get a positional advantage over the other.

But the real life is not perfect. So there's no guarantee that you'll be the pacman, you may be a ghost too. What would happen if you are a ghost ? Then you'd try to catch pacman as soon as possible.

So you'll also need to develop an AI for controlling the ghosts. The two opponents will then have 1 pacman and 1 ghost each. Each pacman will try to collect maximum number of coins and each ghost will try to catch the opponent's pacman.

In short, the rules are as follows :

- 1) The game will be played by two contestants. Each will control a pacman and a ghost.
- 2) The target of each pacman is to collect maximum number of coins and stay away from the opponent's ghost. Each coin carries **1 point**.
- 3) The goal of the ghost is to catch the opponent pacman as soon as possible. After catching a pacman **10 points** are deducted from the pacman, the pacman can be caught again at least after **5 steps** by the ghost
- 4) The contestant's AI has to respond within a time constraint, which will be mentioned later
- 5) There may be some power ups, if a pacman eats them it can eat a ghost. Each time it catches a ghost it obtains **10 points** , the ghost can be eaten again at least after **5 steps**
- 6) The game will be conducted on a symmetric map, that will give no advantages to one over the other. We'll give a sample map to the contestants for test run. However there will be some hidden and challenging maps that'll be used for final evaluation.
- 7) More details will be given later.
- 8) A python framework for the game will be given, and the contestants must code in **python**

