Reinforcement Learning

Reinforcement Learning : Monte-Carlo Tree Search (MCTS)

Start by loading the `tictactoe.py` file provided on the course website. This file contains the implementation of the Tic-Tac-Toe game, including the logic for the game state, moves, and victory conditions.

You are tasked with completing the `mcts_to_fill.py` file, where you will implement a Monte Carlo Tree Search (MCTS) algorithm for the Tic-Tac-Toe game. Specifically, you need to :

- Implement the selection, expansion, simulation, and backpropagation steps of MCTS.
- Ensure that the MCTS algorithm can determine the best move for the current player.
- Avoid modifying the game logic in `tictactoe.py`, your focus should be solely on the MCTS implementation in `mcts_to_fill.py`.

At the end of the lab, you should be able to run the MCTS algorithm to play against a computer opponent in the Tic-Tac-Toe game. You should play againt a random player and compare the results.