UJI Agent

Summary of our agent for LOCM competition at COG19

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We present:

- UJI3Agent: Partially based on paper:

Justesen, N., Mahlmann, T., & Togelius, J. Online Evolution for Multi-Action Adversarial Games. In P. Burelli, & G. Squillero (Eds.), Applications of Evolutionary Computation 2016 (Vol. 9597, pp. 590-603).

https://doi.org/10.1007/978-3-319-31204-0_38

https://lup.lub.lu.se/search/ws/files/5613107/8569741.pdf

Instructions to run the agent

- The agent have been written using **python 3**

- The agent is a unique .py file

- Common libraries have been used

- It has successfully been tested in **codingame** web platform

UJI3Agent

UJI3Agent: Objetive

- The objective is to test a general AI algorithm and to avoid the use of heuristics.

UJI3Agent: Draft

Our agent combines the first and second position draft algorithms in the CEC19 competition: Coac and UJI2 agents.

UJI3Agent: Draft

We try to have a card distribution as follows:

- 5 cards with cost 0 or 1
- 4 cards with cost 2
- 4 cards with cost 3
- 3 cards with cost 4
- 3 cards with cost 5
- 3 cards with cost 6
- 2 cards with cost 7 or more
- 2 red items
- 2 green items
- 1 blue item

UJI3Agent: Draft

When there are several cards that can be selected, we use the order proposed by the Coac agent.

UJI3Agent: Battle

- Check if it is possible to win the game

- If not:

  - Get the list of all possible actions that can be played

  - Apply "Online evolution" algorithm to learn the best order to play the actions.

  - A 1+1 Evolutionary algorithm is used

  - The mutation step consists of changing the order in which actions are played.

UJI3Agent: Evaluation

- For each possible order to play the action a score is estimated.

- Score = A - B

- A = how the health points of the opponent are reduced after playing player actions.

- B = the maximum possible reduction of player health points if the opponent, in the next turn, decide to directly attack to the player with all the cards.