

Report for Reinforcement Learning Project

Put your name here

Abstract—Make an abstract that summarises the report. Keep in mind that your report should not exceed 4 pages (without appendix and references) with a few figures in it. You don't need to write 4 pages to have a good report but to ask the good questions about your agent. You can also add interesting figures in the appendix if you need to. If you have used any source, use the references to add them.

I. PRESENTATION AND CHOICE OF THE GAME

A. Presentation of the game

You can present your game if it is not well-known. Explain what are the usual strategies and a quick description of the game. If you have made your own implementation of the game you should describe it here.

B. Choice of the game

Why have you chosen this game especially ? What is interesting in this game according to you ? What could be the new features that you can add to the game ?

C. The environment

Describe your environment. The following questions might help you :

- What is your State Space ?
- What is your Action Space
- What is your Reward function ?
- Is your environment deterministic or stochastic ? What are the probability distribution ? Can you change them ?
- Does it have any link with real-life application ?

II. IMPLEMENTATION OF YOUR AGENT

A. Agent design

What kind of algorithms have you used for your agent ? Have you tested different solutions ? What architecture have you used if you used Deep Learning ? etc.

You can put the equations that are related to your solution.

B. Implementation

Describe your exact implementation.

What kind of trouble have you encountered during the implementation ? during the training ?

You can add your learning curves here.

III. EVALUATION OF YOUR AGENT

Describe the learned behaviour of your agents but also its fails. Explained its evaluation at different steps of the learning.

- Compare your agents **amongst themselves** : training several agents allows you to compare them on specific tasks.
- Compare your agents with **existing baselines** : Many agents already exists online for almost all games from the proposed list. You can compete with them. Don't expect to win against the State Of The Art agent !
- Compare with **humans** : Are you better than your agent ? If it's adversarial, play against your agent many times to evaluate it. Otherwise, can you get a better score than him ? Is it better than an average human ? A pro player ?

Choose metrics such as cumulated rewards (or anything else !) to evaluate your agents.

APPENDIX

Put here other results that are not essential to understand how your agent behave.

You can also add here some remaining work or unfinished tasks that you haven't presented before.

REFERENCES

- [1] Albert Einstein. *Zur Elektrodynamik bewegter Körper*. (German) [*On the electrodynamics of moving bodies*]. Annalen der Physik, 322(10):891–921, 1905.