COMP8620: MC-AIXI-CTW
Group 3

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1 Introduction

1.1 Domains

The domains assigned to group 3 are as follows:

Pacman, Tic-Tac-Toe, Biased Rock-Paper-Scissor, Extended Tiger, Cheesemaze

1.2 Files

The report archive should contian the following:

```
MC-AIXI-CTW-Grp3.zip
    \report
        report.pdf // this report
        report.tex
        cheesemaze_01.png // results plots
        extended_tiger_01.png
        biased_rock_paper_scissor_01.png
        tic_tac_toe_01.png
        pacman_01.png
    \src
        main.hpp
        main.cpp
        environment.hpp
        environment.cpp
        agent.hpp
        agent.cpp
        search.hpp
        search.cpp
        predict.hpp
        predict.cpp
        util.hpp
        util.cpp
        README.md
        cheesemaze.conf // environment configuration files
        rockpaper.conf
        tictactoe.conf
        coinflip.conf
        tiger.conf
```

1.3 User Manual

2 MC-AIXI-CTW Implementation

2.1 Environments

2.1.1 Cheesemaze

2.1.2 Extended Tiger

2.1.3 Biased Rock-Paper-Scissor

2.1.4 Tic-Tac-Toe

2.1.5 Pacman

2.2 Monte Carlo Tree Search (MCTS) Algorithm

a) Source code files

b) Class structure (SearchNode, DecisionNode, ChanceNode, ...)

c) Description of the algorithm (Veness...)

2.3 Context Tree Weighting (CTW)

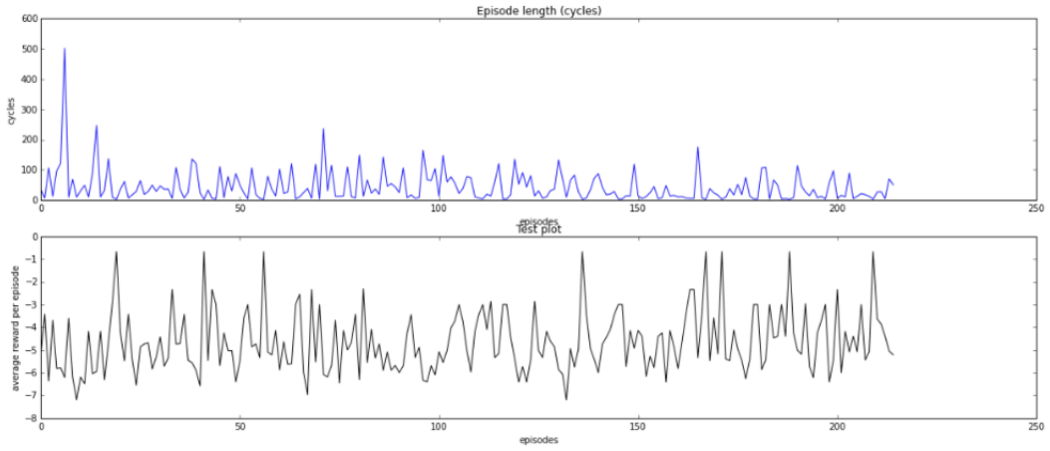
3 Simulation Results

3.1 Cheesemaze

- Experimental setup ...
  Any simulation provided should include detailed description of experimental setup; selected parameters of algorithms and examples; and concise interpretations of obtained simulation results.

Environment	MCTS	CTW
1	$m = 100$	ct-depth $= 96$
	$C = \sqrt{2}$	

- Plots ...



- Interpretation of Results

3.2 Extended Tiger

Experimental setup ...
Plots ...

3.3 Biased Rock-Paper-Scissor

Experimental setup ...
Plots ...

3.4 Tic-Tac-Toe

Experimental setup ...
Plots ...

3.5 Pacman

Experimental setup ...
Plots ...

4 Cross Domain Simulation Results

Cheesemaze and Extended Tiger

5 Possible Other things

Cross domain simulation on more difficult environments...
Separate CTW for Obs and Rews...