COMP-3200-001 (Algorithmic Tech Smart Systems - 88685)

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✉▭ CS3200FinalProject.zip (28.93 MB)	Apr 14, 2018 3:49 PM

A Comparison Of Reinforcement Learning Algorithms Using Blackjack

Ready for the slaughter
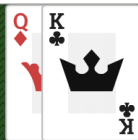
[Q]uit [H]it [S]tand [D]oubleDown Change[P]olicy: MonteCarlo [R]estart Game

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Introduction

In this project, we aim to develop an optimal playing strategy for the popular game Blackjack. The game is commonly played at casinos worldwide. The rules are straightforward and it serves as an interesting model to compare reinforcement learning algorithms. Which reinforcement learning algorithm produces the best results with minimal parametric tweaking? This is the question that we aim to answer.

Usage

Windows

- A pre-built `.exe` of the Blackjack game, which is retrieving from the static policies generated can be found in the `Executable/` directory.

Source Code

- The model of the game is found in the Source Code/ directory in the `Model.py` file.
- The view generated is found in the Source Code/ directory in the `View.py` file.
- The AI agent is found in the Source Code/ directory in the `Controller.py` file.

Reproduce Results

- To reproduce the results shown in the report, please execute the `ResultDataWriter.py` file found in the Source Code/ directory, and input your choice of parameters.
- The results of the execution will be found in the `results.csv` file.

Report

The final report for this project is found in the License and Report/ directory.