Project 2 Plan

Project plan is due: 11pm Monday 22nd of April

Project 2 is due: 11pm Tuesday 21st May

Milestones

Task	Date
Design framework	week 7
Create agent that choses a random valid move to test the framework	week 8
Create a greedy agent to be the benchmark (time cost)!	week 8
Create basic adversarial search agent	week 9
Write the report	week 9
Create advance adversarial search agent based on research papers given by Matt	week 10
Elaborate on the report	week 10
Submit assignment	week 11

Possible algorithms

Basic adversarial search agent:

Paranoid Minimax with alpha-beta pruning with simple evaluation function.

Simple evaluation function: heuristic distance to goal and number of pieces on board.

Advance adversarial search agent:

Maxn with immediate pruning and shallow pruning and lazy evaluation.

Use learned evaluation function

Share workload

Together:

Design and implement basic and advance agent.

Chuan:

I will focus on random move agent and greedy agent.

Huang:

Machine learning based agent. Experimental Deep-Q-Learning based agent, or monte-carlo simulation based agent.

Meetings

Every Sunday 1000 to 1200

Other commitments

Chuan's assignment due dates

Computer Systems assignment 1 : 13:59 Monday, April 29th, 2019

Computer Systems assignment 2 : (not yet out) Mostly likely due in week 11

Machine learning assignment 2 : (not yet out) Most likely due in week 11

Huang:

Machine learning assignment 2

Software Modeling and Development assignments

Linear Statistical Modelling assignments

Bayesian Risk Limiting audit research

COMP10001 Tutor and Demonstrator and assignment marking

Resources

- Russell, S. J., & Norvig, P. (2016). Artificial intelligence: a modern approach.
  - Section 5.2.2 touches on $\max^n$ and alliances.
- Luckhart, C., & Irani, K. B. (1986). An Algorithmic Solution of N-Person Games.
  - Introduces $\max^n$ and "lazy" evaluation idea (confusingly, calling it shallow pruning).
- Sturtevant, N. R., & Korf, R. E. (2000). On pruning techniques for multi-player games.
  - Analyses $\max^n$ alpha-beta pruning, introduces "paranoid" reduction, includes some experiments (on card games).
- Korf, R. E. (1991). Multi-player alpha-beta pruning.
  - Analyses $\max^n$ alpha-beta pruning in greater detail.

https://github.com/oujago/NumpyDL/tree/master/npdl