SAMFYB / FP-150-Notebook

Branch: master ▼

FP-150-Notebook / Lecture_20.md

Find file

Copy path



SAMFYB doctoc

407f46c 12 days ago

1 contributor

53 lines (33 sloc) 1.31 KB

Lecture 20 - Game Theory

- Modular Framework for the following kinds of Games
- Game Trees
- Estimators
- Modular Framework
- Implementation

Modular Framework for the following kinds of Games

- 2-player (alternate turns)
- deterministic (no dice)
- perfect information (no hidden state)
- zero-sum (I win, you lose; ties OK)
- · finitely-branching (maybe even finite)

Game Trees

- Nodes represent current "state of game"
- Edges represent possible moves
- A given level corresponds to a given player, alternating turns

Estimators

In practice, trees are too large to visit all leaves.

Instead,

- expand tree to some depth
- use game-specific estimator to assign values (not just 1 or ~1) at bottom-most nodes explored

Then, backchain minimax as before.

Repeat this after each actual move.

Issue: Horizontal Effect

Modular Framework

Game: GAMEPlayer: PLAYERReferee: G0

Implementation

See code.