

CSCI 3202

Lecture 22

October 17, 2025



Diamond Lil by Brett Keith: <https://www.gocomics.com/diamondlil>

Announcements

- Course project information available on Canvas
- Submit your project choice and partner by Wednesday, October 22 at 11:59 pm
 - **All** class members must submit
- Homework 6 Due on Friday, 10/24 by 11:59 pm

Quiz #7

- Average was 80%
- Most missed was the question on which nodes were pruned
- Review

How We Use minimax to play chess

- Chess is a complex game which requires a large game tree when there are many pieces on the board
- One way around this is to divide the game into three (or more) phases
 - Opening: first 10-20 moves
 - Midgame: moves between opening and endgame
 - Endgame: moves where there are ~10 or so pieces on the board
- **Opening:** Use a database of well-vetted opening moves
- **Midgame:** Use Alpha Beta to find the best move
 - The utility function is calculated using a neural network trained by evaluating millions of games

- **Endgame:** Construct a database of the best move with a limited number of pieces on the board.
 - I have seen databases that have best move (winning move) for 7-8 pieces
 - These databases are very expensive in computation time to compute
- By combining multiple methods, it is possible to create a game player that plays quickly and plays a superior game

Project

- [CSCI 3202 Course Project 2025.pdf](#)
- Make a choice on which project and whether to work alone or with someone else
- Submit by Wednesday, October 22 at 11:59 pm
- **All** class members must submit a survey
 - This means that both team members must submit

Markov Decision Processes

- Sequential decision problem
- Fully observable, stochastic environment
- Markovian (probabilistic) transition model
- Additive reward structure
- [Markov Decisions Processes.pdf](#)

Upcoming

- More Markov Decision Processes