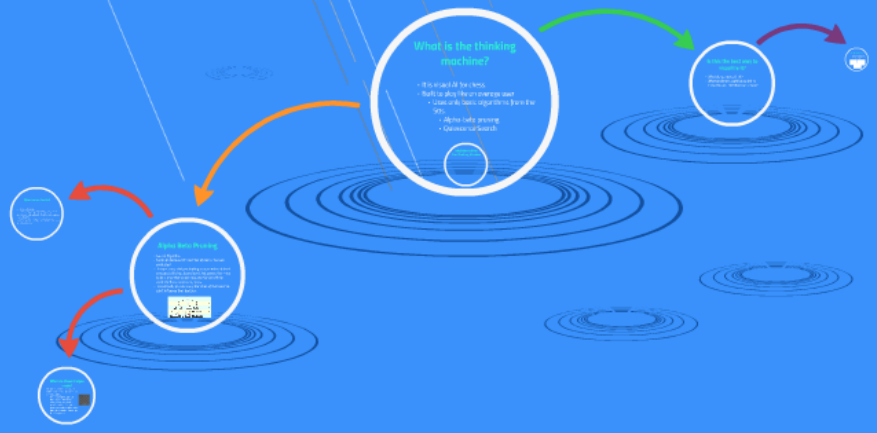
Thinking Machine



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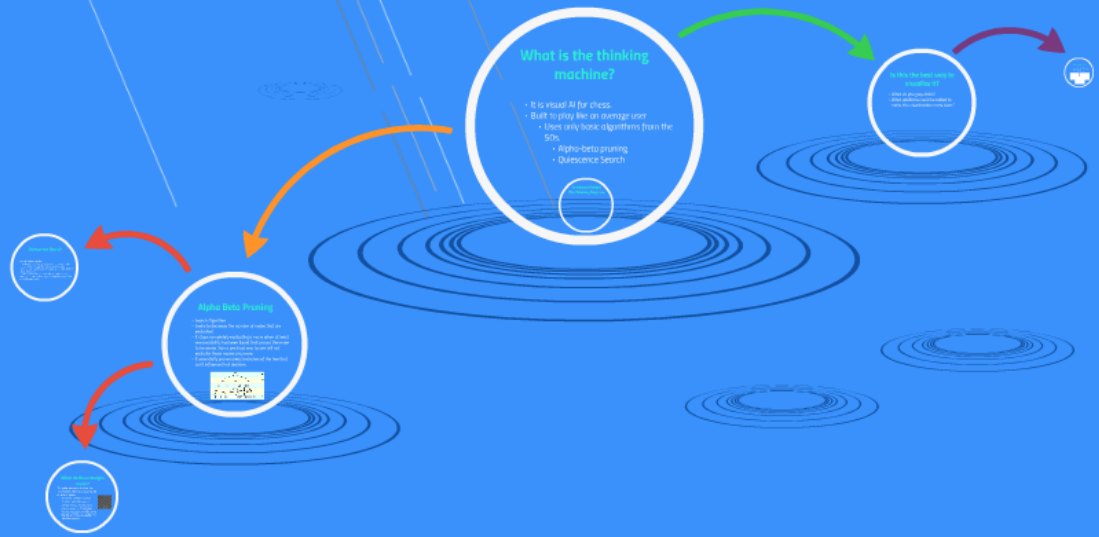


Brief Idea Behind The Thinking Machine

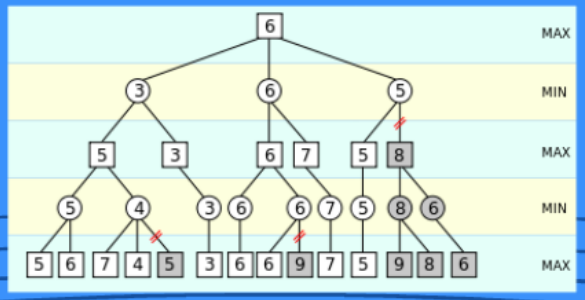
What is the thinking machine?

- It is visual AI for chess.
- Built to play like an average user
  - Uses only basic algorithms from the 50s.
    - Alpha-beta pruning
    - Quiescence Search

Brief Idea Behind
The Thinking Machine

Alpha Beta Pruning

- Search Algorithm
- Seeks to decrease the number of nodes that are evaluated
- It stops completely evaluating a move when at least one possibility has been found that proves the move to be worse than a previous one. So we will not evaluate those moves any more.
- It essentially prunes away branches of the tree that can't influence final decision.



Quiescence Search

- remedy for horizon problem
  - Computer only searches certain number of moves ahead, so something detrimentally could happen afterwards
- Humans have intuition to abandon a bad move and this algorithm tries to imitate that
- It searches for "interesting" moves (based on the evaluate function) and searches them at greater depths than "quiet" (lower evaluation score) moves.

What do these images mean?

The pulse you see is to show the influence (number of unique moves) of various pieces.

- When the machine plays it displays potential moves, orange moves are black and green are white. The lighter moves are good for white, while the darker moves are better for black (computer).

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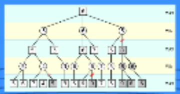

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Is this the best way to visualize it?

- What do you guys think?
- What additions could be added to make this visualization more clear?

Thinking Machine 5

- They are currently working on the thinking table (a physical table where two people can play chess)

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