An AI for Peshka

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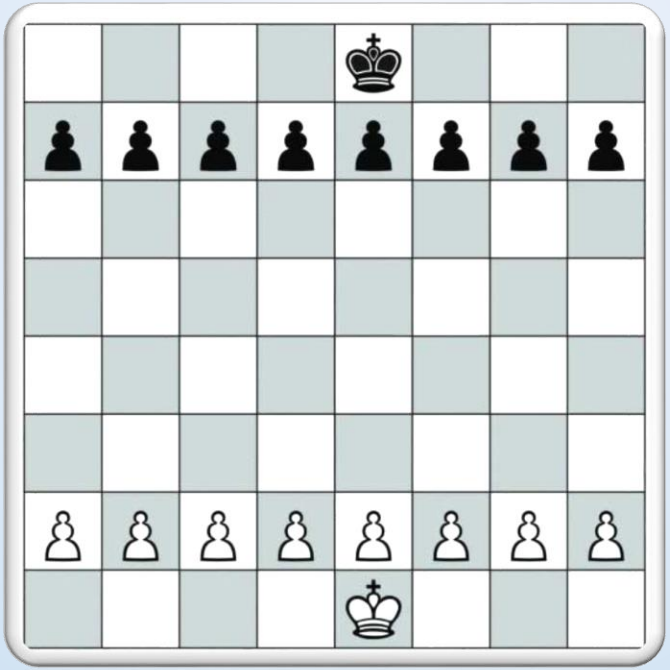
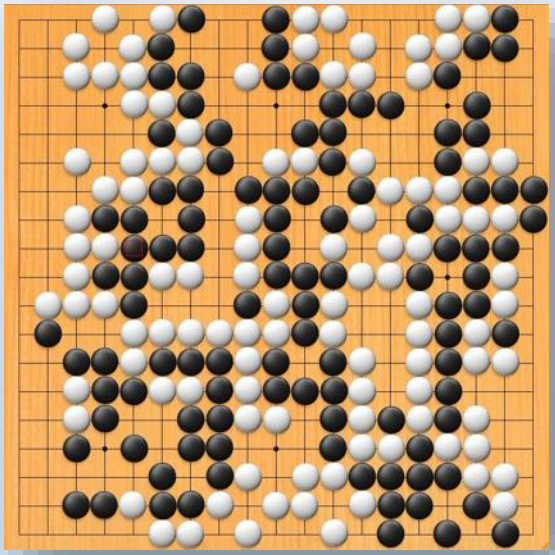
What is Peshka?

- A chess game where the starting board has only the pawns and the king.



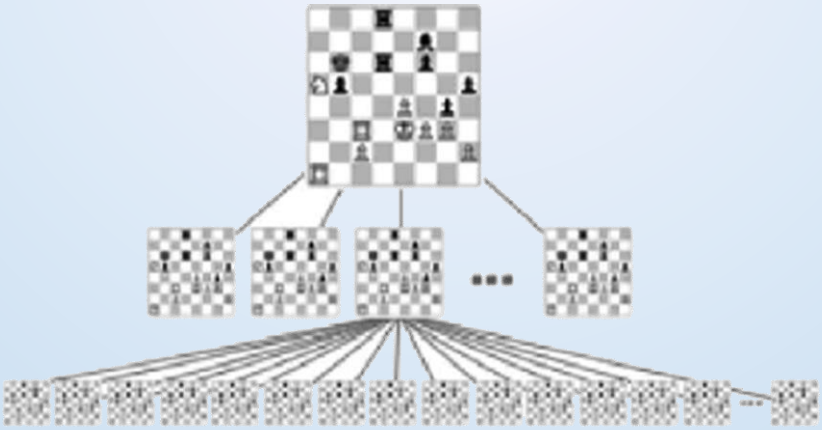
AlphaGo

- Three month ago, Google Deep Mind managed to build an AI that beat the world's best Go player
- We reproduced it with Peshka



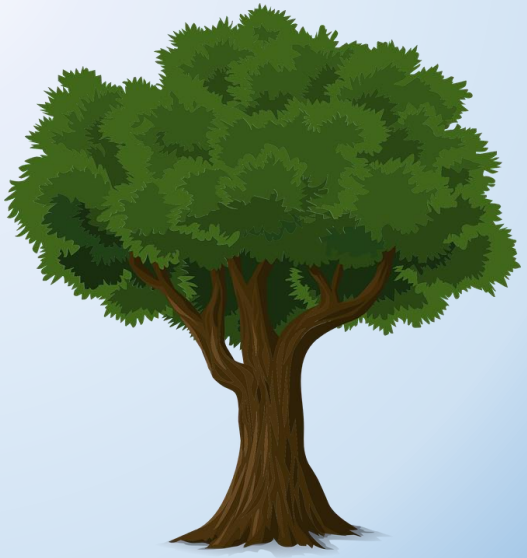
Our Peshka AI

- Traditional chess AI's use Minimax algorithm
- We have designed an AI based on a guided **Monte-Carlo tree search**
- Our AI was developed on top of the Stockfish chess engine



Monte-Carlo tree search

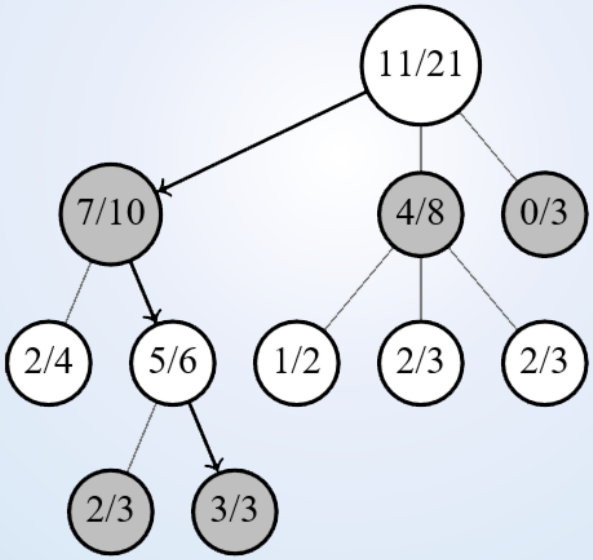
- An asymmetric search tree
- Game nodes store statistical data about their winning probability.
- The tree will be guided using a smart heuristic function



Monte-Carlo tree search

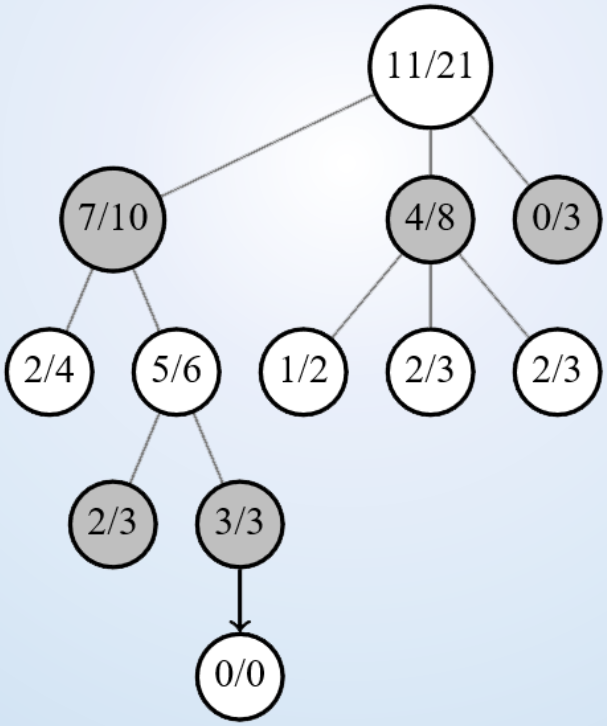
Selection

- Select an Interesting leaf node



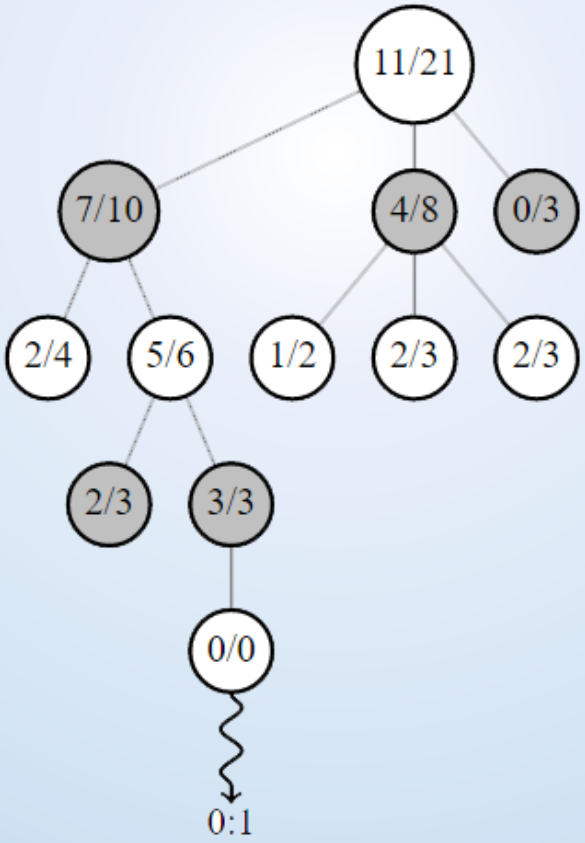
Expansion

- Expand this node using smart heuristic guidance



Simulation

- Simulate the game until the end

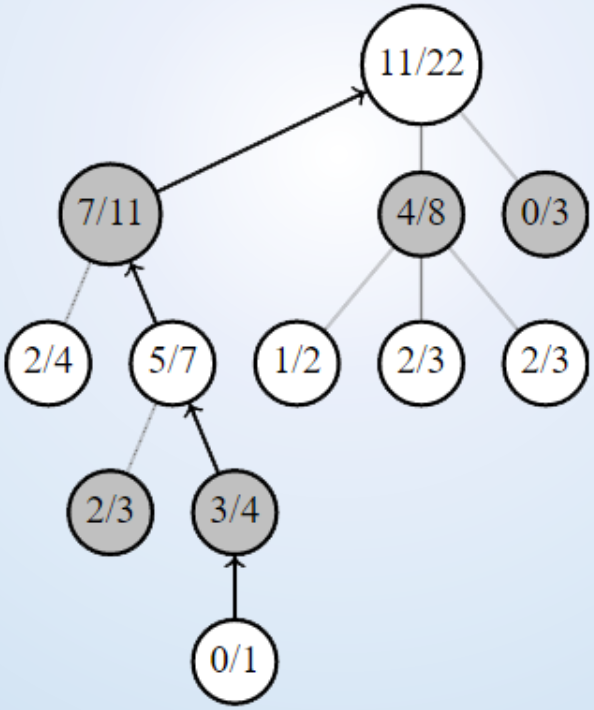


Guided Simulations

- Choose moves smartly instead of random sampling
- We used Stockfish's heuristic function
- AlphaGo learned moves with Deep Learning

Back-Propagation

- Back-propagate the result, updating game statistics



Thank you!