Happy Go Lucky Team

- Caloian Andrei George
- Marinoiu Radu Florin
- Reiner Silvan
- Munteanu Cosmin

Go Basic Rules

- Two Players take turns placing a stone on the board
- Stones that are completely surrounded are removed
- The player, who surrounded more territory, wins the game

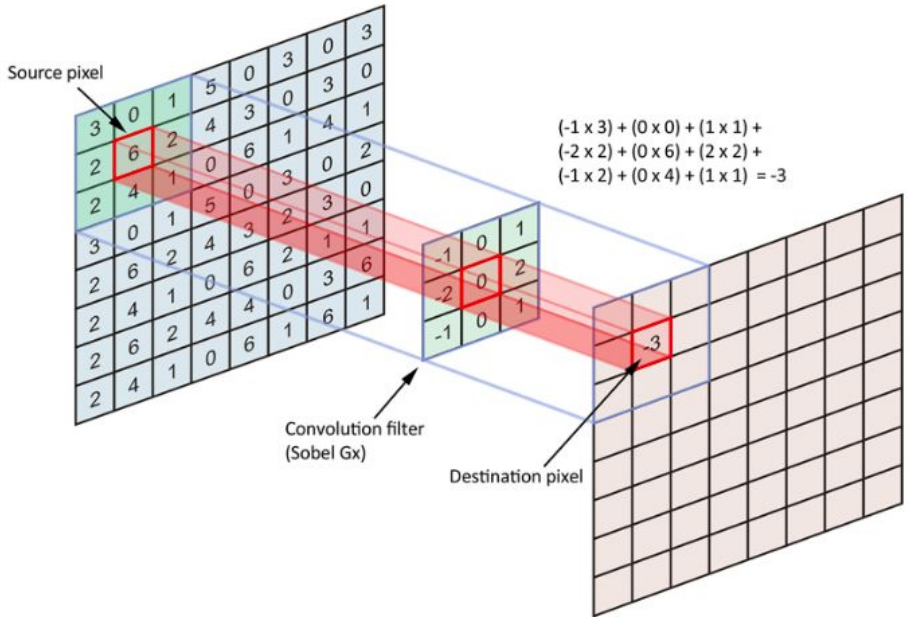
Why is Go a difficult Problem for AI

- On average 200 different possible moves for a position
- About 250 moves in a typical game
- 10^170 different legal positions

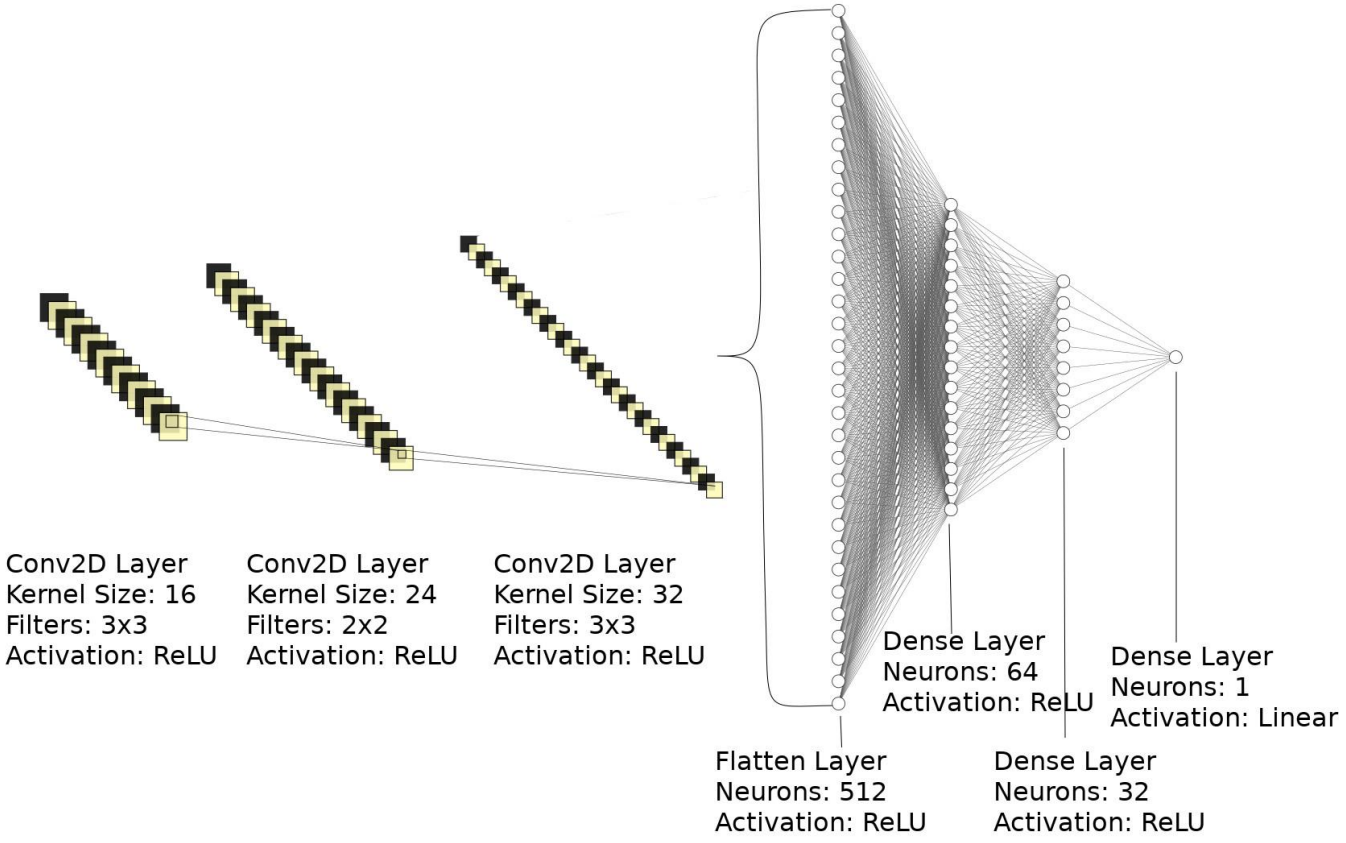
- => Classical Algorithms like Minimax can not explore the state tree deep enough in a reasonable amount of time

Convolutional Networks

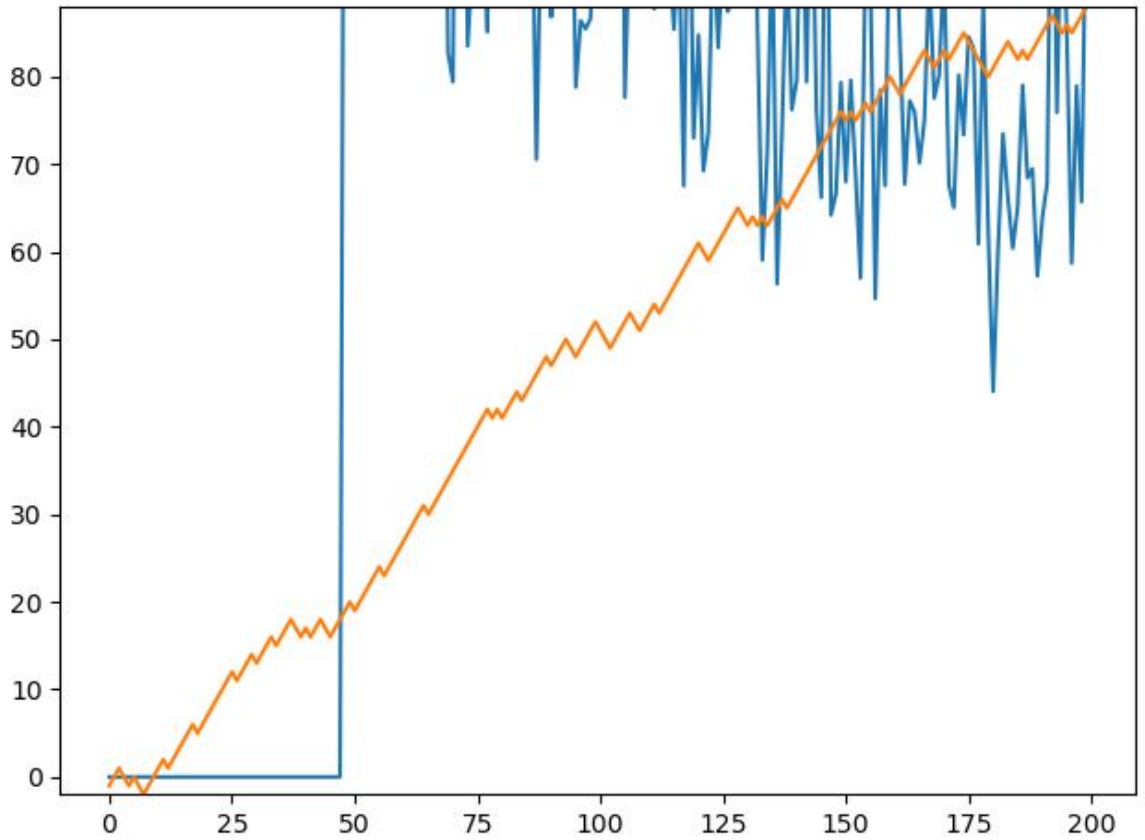
- Reduces the number of weights in the network
- Allows the network to generalize features



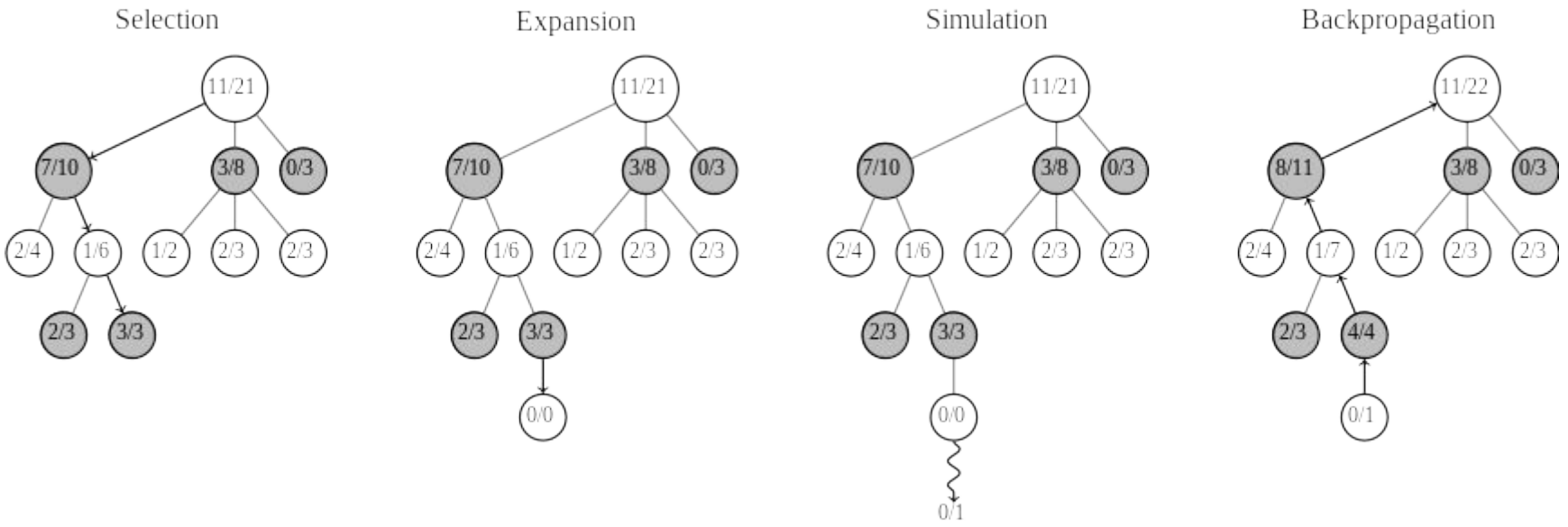
Our convolutional neural network



Mean Squared Error, Delta Score / Number of Games (Training)



Monte-Carlo-Tree-Search



Some Optimizations

- Exploiting Symmetries (Rotation, Mirroring, Swapping of Players) to increase the amount of training data by a factor of 16
- Visit previously highly rated moves first