Title

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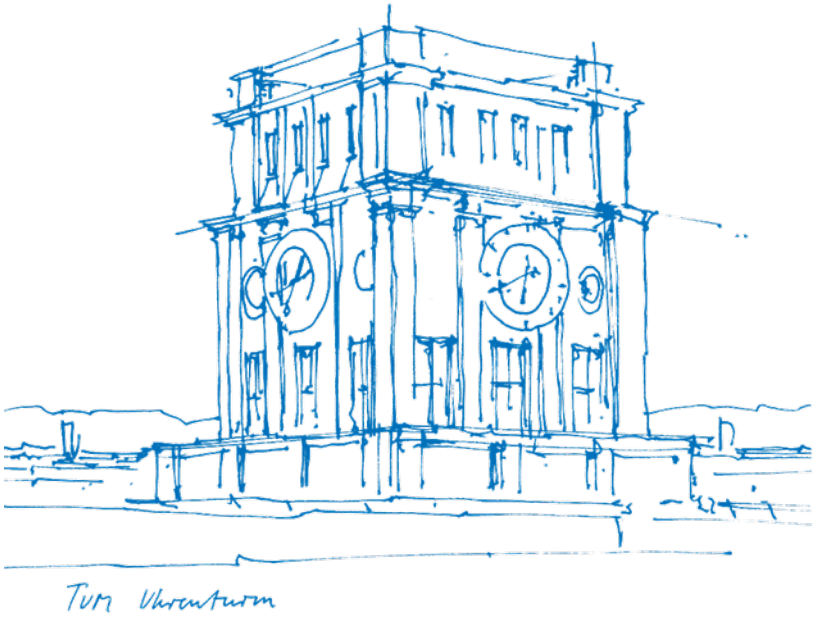

Introduction

- Checkers is a strategy game involving diagonal moves of pieces and captures by jumping over opponent pieces.
- The objective of the project is to create an AI player using reinforcement learning.
- Techniques: Q-learning and Deep Q-Networks (DQN).

What is Reinforcement Learning?

- A machine learning paradigm focused on training agents to make sequences of decisions.
- Key components:
  - **Agent**: Learns to act in an environment.
  - **Environment**: The system with which the agent interacts.
  - **Reward**: Feedback signal indicating the success of an action.
- Goal: Maximize cumulative rewards over time.

DQN

Future Work

- Fine-tuning the DQN model for improved decision-making.
- Incorporating advanced techniques like Double DQN and Dueling DQN.
- Testing against human players to evaluate real-world performance.
- Extending the approach to other board games or strategy games (some side-projects).

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