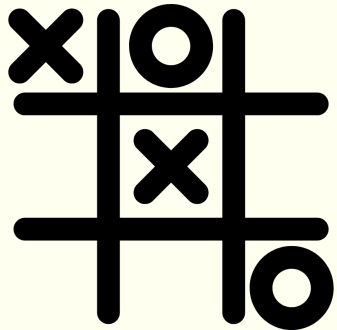


Katie Fort • Jean Cheng •  
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Jacobs

# Building a Tic Tac Toe Agent



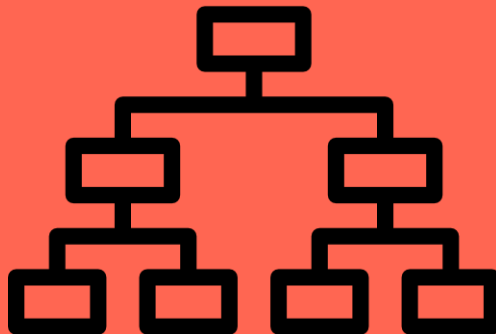
# Minimax with Alpha-Beta Pruning

2



## Minimax

- Simulates all possible moves to find the optimal strategy
- The minimizing player tries to block, and the maximizing player tries to win
- Assumes that both players play perfectly

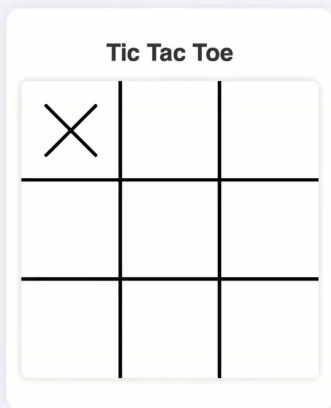


## Alpha-Beta Pruning

- Makes minimax faster without changing the result
- Uses beta (best for min) and alpha (best for max) to prune
- Skips branches that will not affect the final decision

# Demo

3



## Takeaways

- AI always wins or ties
- AI wins if the human does not play the middle square

# Overview

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- **Never Loses (Plays First)**
- **Fast Decision Making**
- **Reusable Framework**

Tic Tac Toe

X		