Reversi group 6
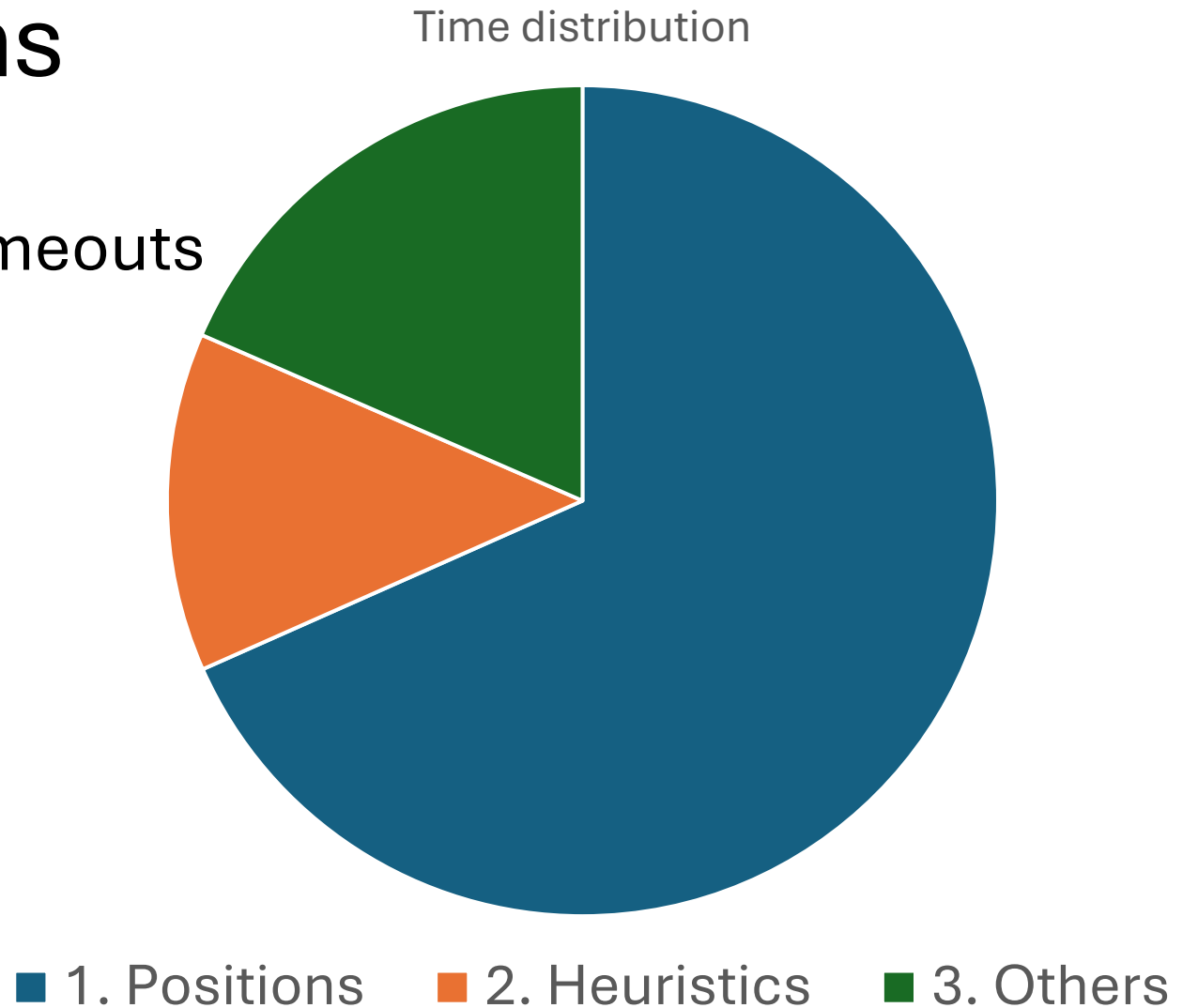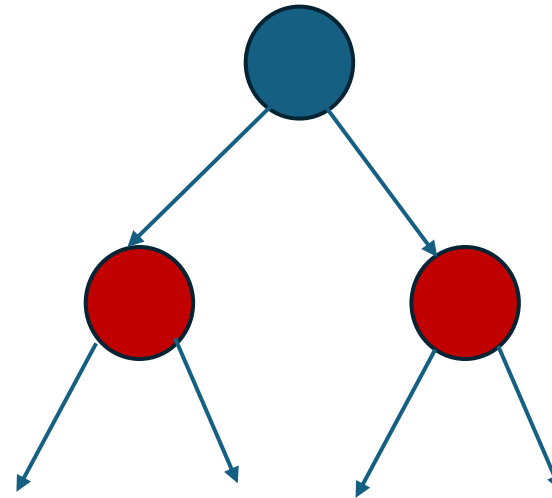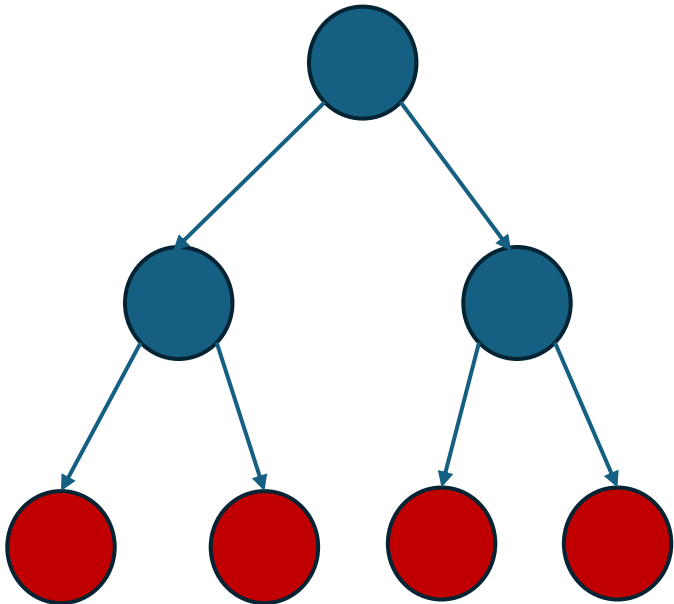
MiniMax Algorithms

Performance Problems

- Disqualifications caused by timeouts
- On depth limit 2
- Especially on large maps
- Total time: 191,6s

Time distribution

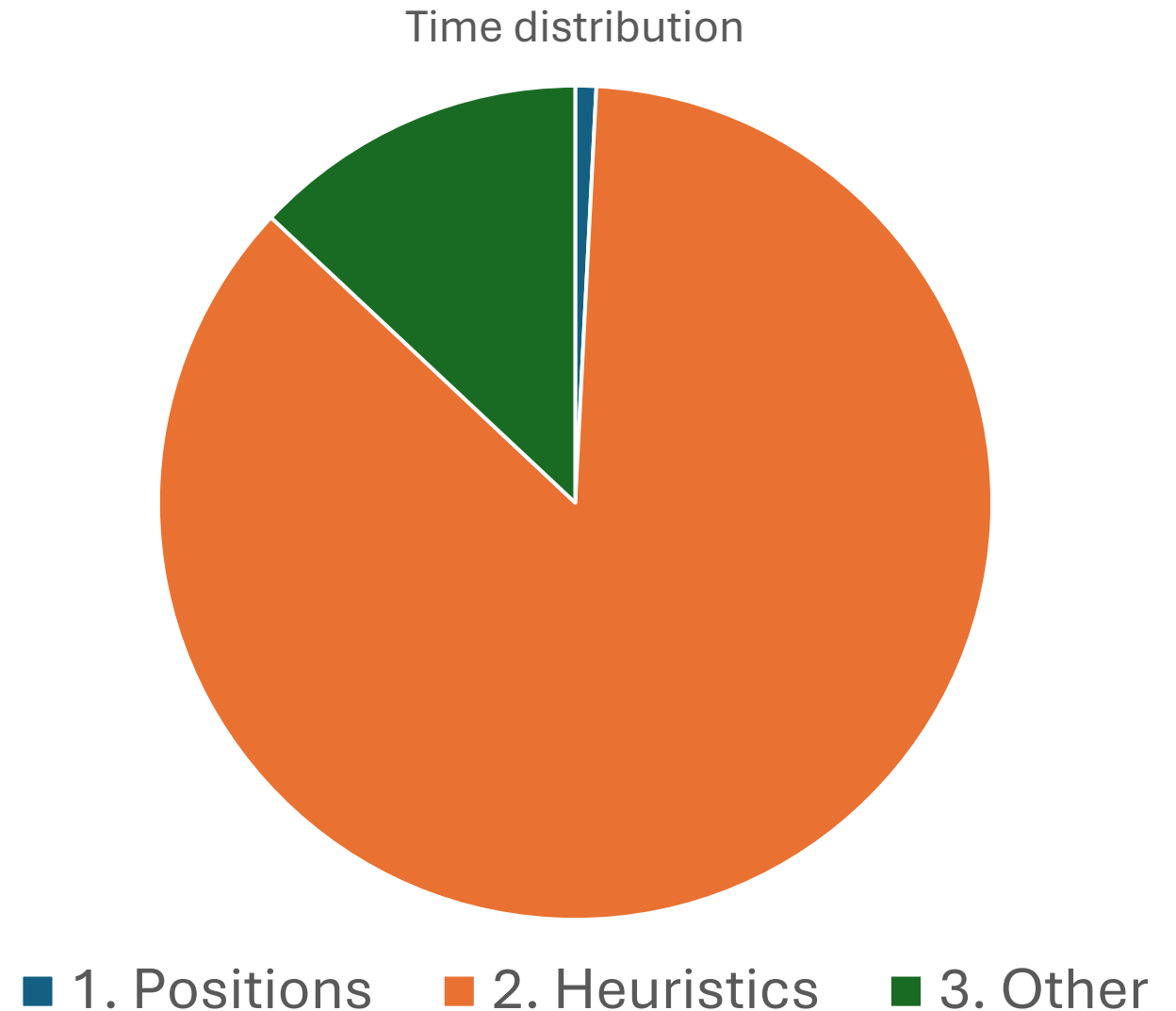■ 1. Positions ■ 2. Heuristics ■ 3. Others

1

Solution

- Heuristics evaluating move on position
- How many stone does the move capture?

Improved version

- Heuristics now biggest part

- Rewrite heuristics

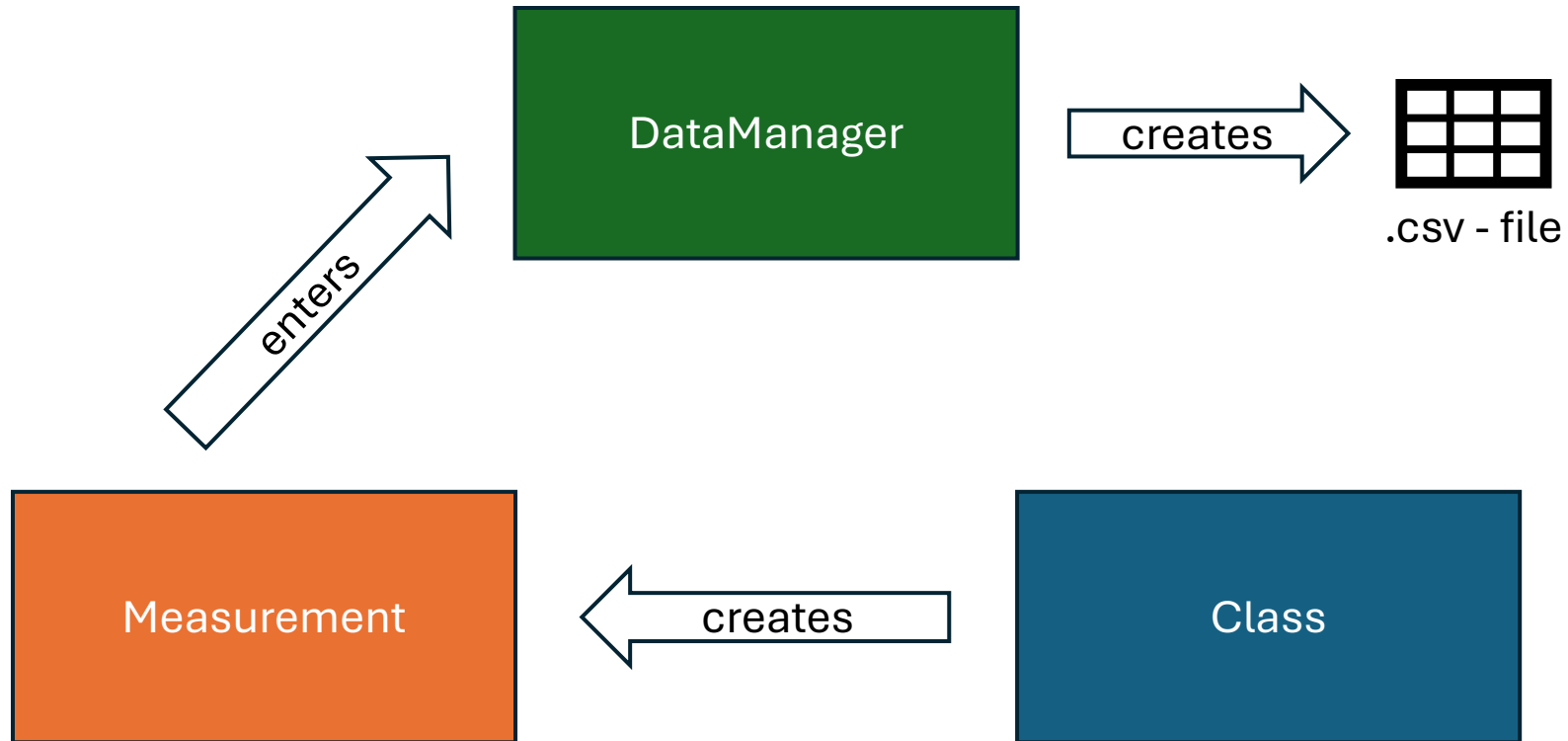- Total time: 28,1s (-85% !)

- Strong performance on other maps

Time distribution

■ 1. Positions ■ 2. Heuristics ■ 3. Other

3
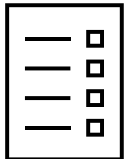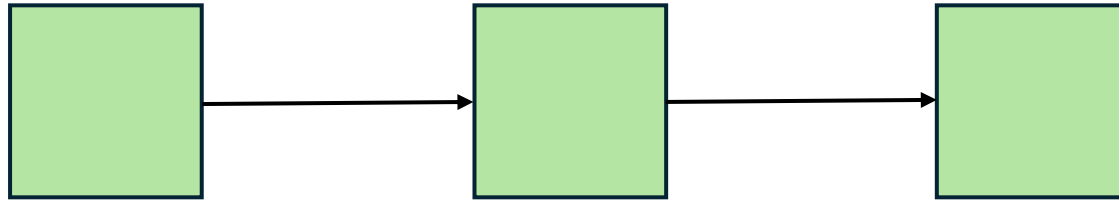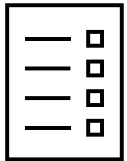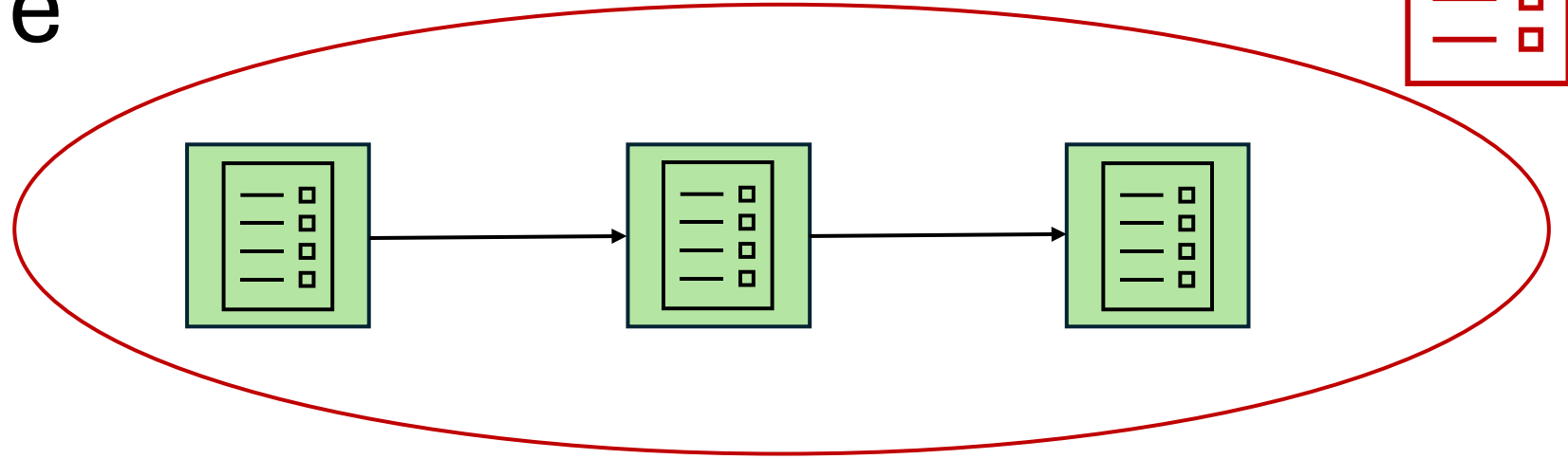
Measurement System

Architecture

Data Structure

Data bucket

Measurement

Arraylist

Data Structure

Data bucket

Measurement

Arraylist
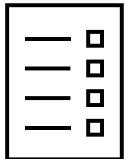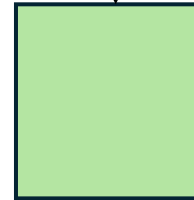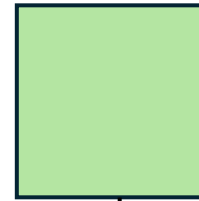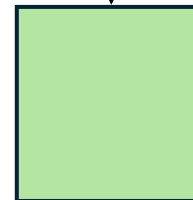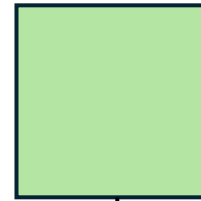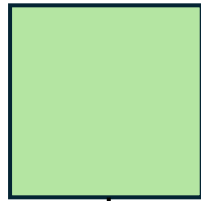
Data Structure

Data bucket

Measurement

Arraylist

Data Structure

Data bucket

Measurement
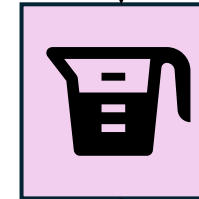
Arraylist

Comparison

Pruning vs minimax total time spent
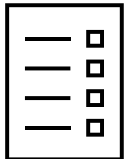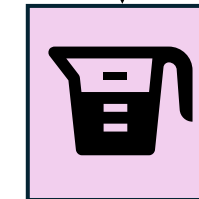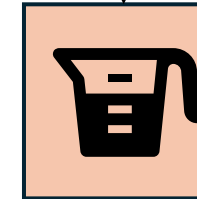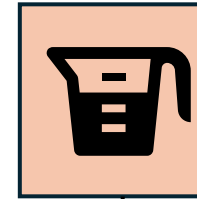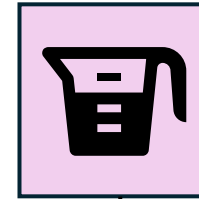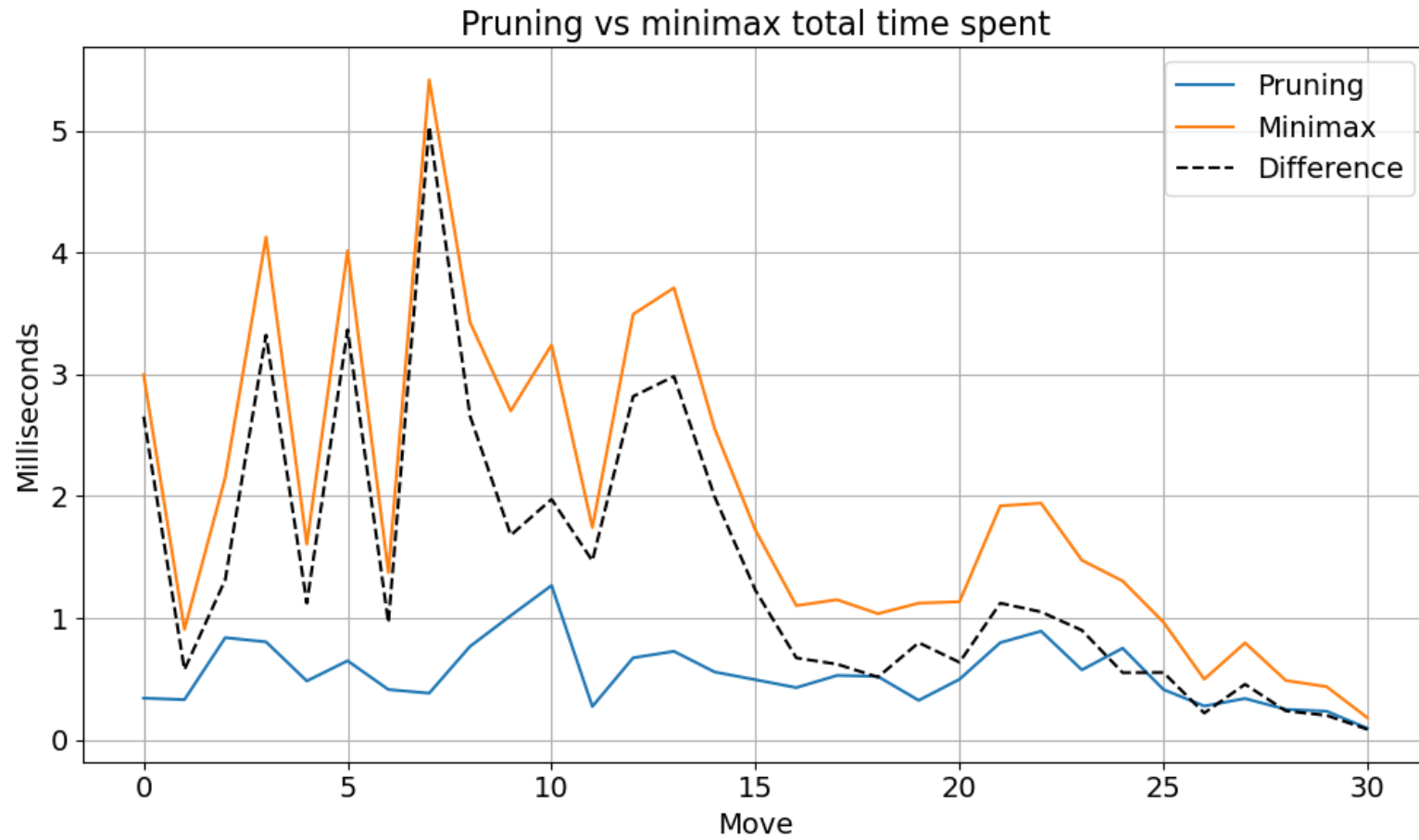
Why is pruning better?

- Less states visited

➡ Less states need computing

Pruning vs minimax states visited
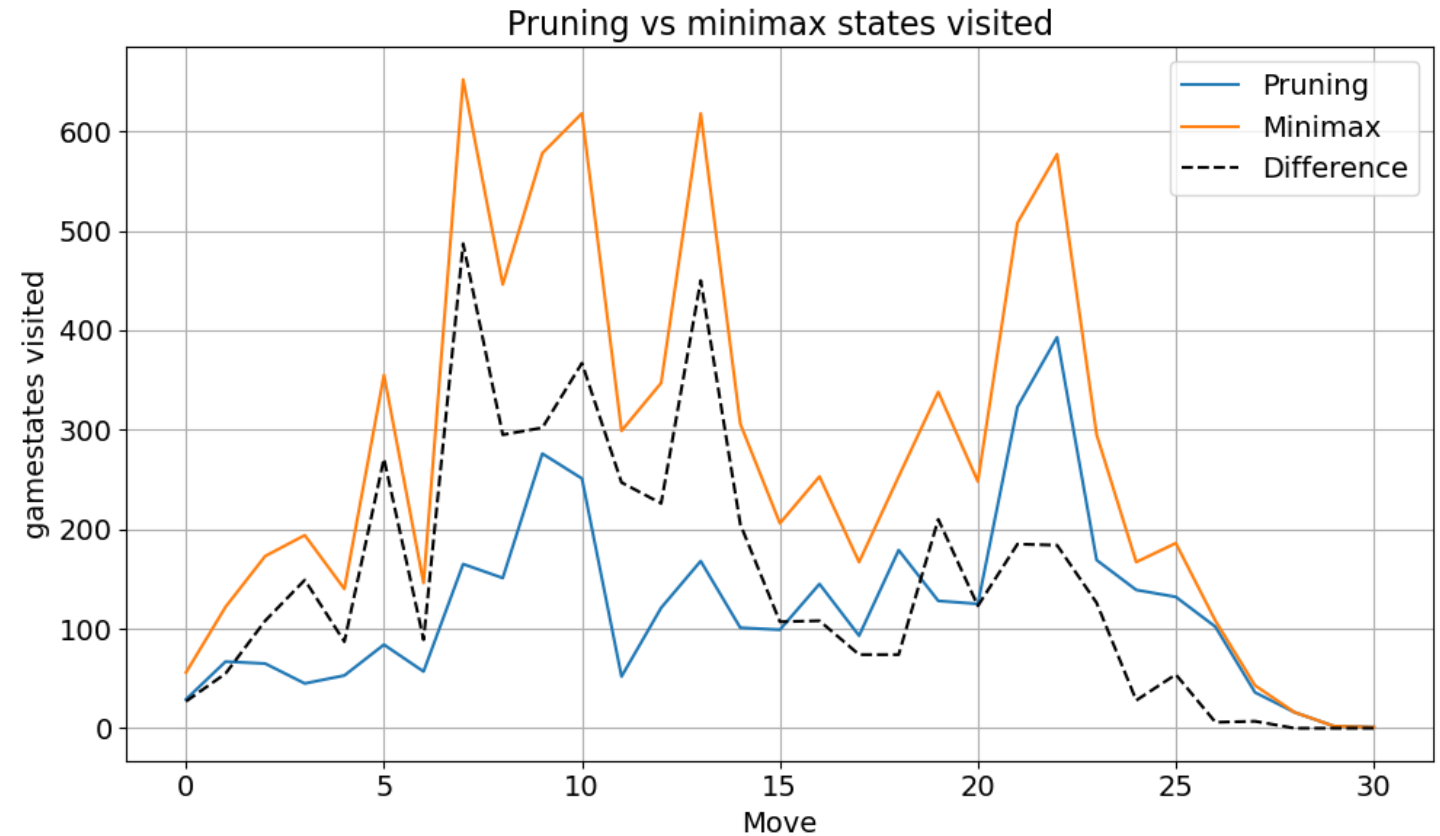
pruning upgrade ideas

- Biased alpha beta pruning
- Prune all overwrites

Dynamic Heuristics

- Corner side propagating to the inside