TECHNISCHE UNIVERSITÄT DRESDEN

Faculty of Computer Science, Institute for Artificial Intelligence, Computational Logic Group

PlayGrrr Implementation

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Outline

Communication and Search

- ECLiPSe Prolog
- Easier recognition of key predicates in the GDL
- But: slow computing without optimization (using the cut)

Iterative Deepening Depth-First Search

- Store visited states (without step counter) in a hashtable
- No heuristics
- Delete visited states when memory becomes short
- Save states of the new level
- Currently the player struggles when playing games with huge state space

Monte Carlo Tree Search

- Using a hashtable for visited states
- Update best move periodically after X iterations to speed up
- Memory management: same as in iterative deepening
- Goal: stable player which can compute as many simulations as possible

04 Future Improvements

General Improvements

- Code optimization
- Heuristics: Novelty, Mobility, Inverse Mobility

Single Player

- Replace iterative deepening with A*
- Cancel search when

Multi Player

- Adjust factor C in confidence bound formula