Pinky & Brain Player

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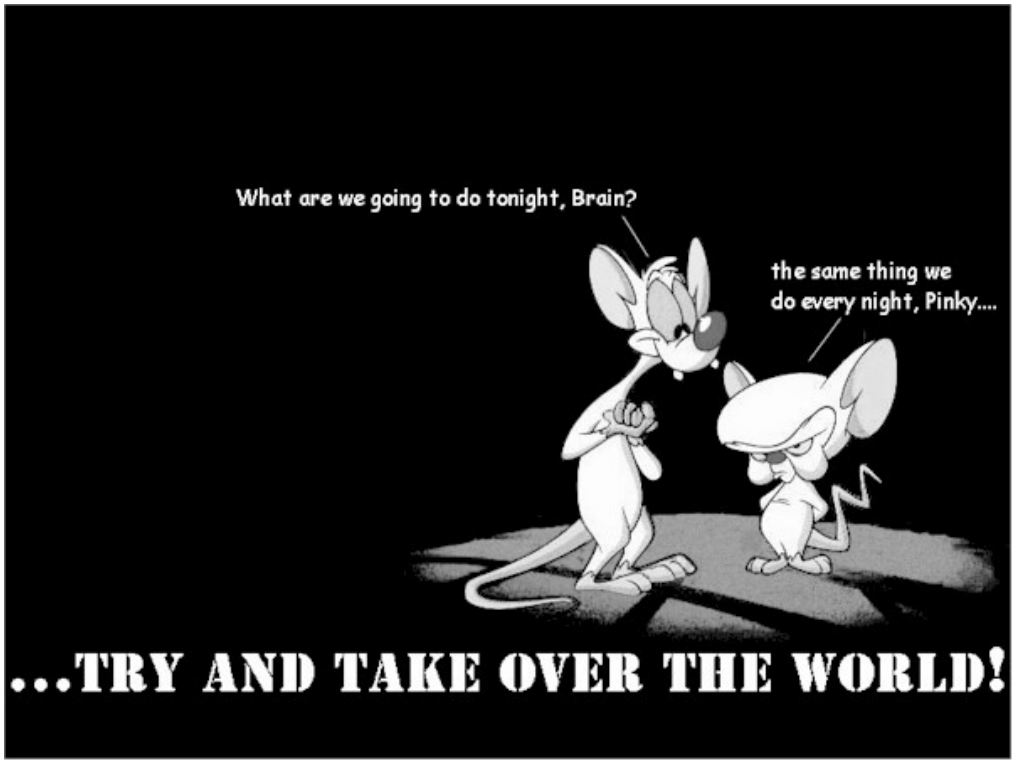

Dresden, 02.04.09

Overview

1 configuration
2. strategies
2.1 single-player
2.2 multi-player
3 conclusion (problems, etc.)
4 future development

1 configuration

- ECLiPSe Prolog c++ interface as reasoner
- boost::asio for communication

platform:

- quad core 2.3GHz, 4GB RAM, linuxMint x64
- dual core 2.0GHz, 2GB RAM, fedora 10 x64

2 strategies

Meta-Strategy

- a strategy that redirects the responsibility to adequate strategies

- currently only for single- and multi-player, but possibly for zero-sum, simultaneous-move and other game-types

2 strategies
2.1 single-player

Monte Carlo Strategy

- playing random moves
- calculate expected goal-value for each move and pick best one
- easy to implement, but too strongly based on randomness

Little Modifications

- path to goal state will be saved and immediately returned

2 strategies
2.2 multi-player

Trivial Monte Carlo Tree Search

- UCT is implemented, but is not stable.

3 conclusion (problems, etc.)

Palamedes:

- for us useless large game-tree in background and some unexplainable bugs retrieving game states from nodes

ECLiPSe Prolog:

- found during development at least three severe bugs
- still struggling with memory issues (really time-consuming gc)

=> reason why UCT is not working at the moment

Credits: Stephan Schiffel for helping us out so many times!!

4 future development

- working UCT implementation
- cool heuristics (RAVE, simulation strategy, ...) for UCT
- maybe nash equilibria for UCT