Playing Clue

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Overview

- Implement an algorithm to play the classic board game Clue
- Attempt to determine which kind of algorithms play best

The Game

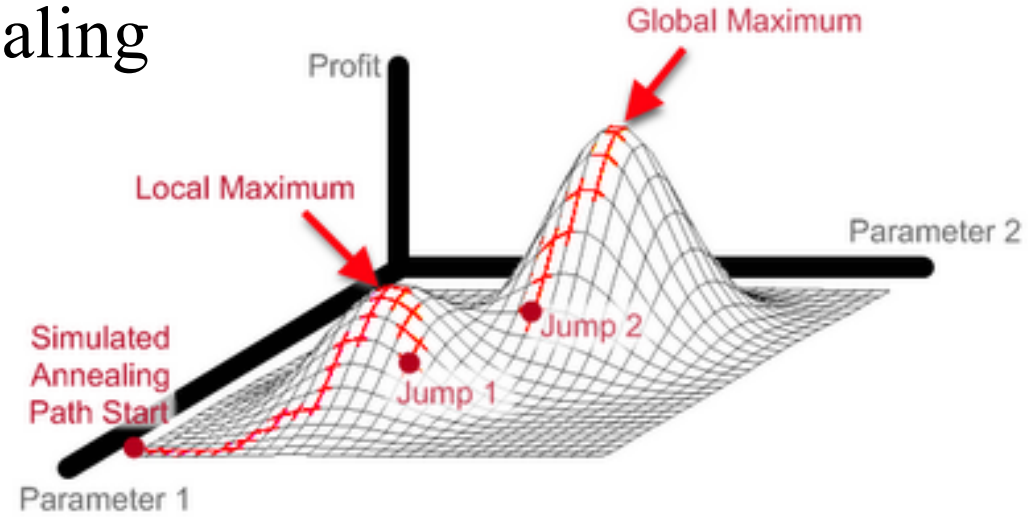
- Divided into squares and rooms
- ‘Clues’ distributed to players
- Attempt to determine which clues were not distributed
- Direct Information
- Indirect Information

The Motivation

- What if you want to program a Clue game? Players should be able to play against the computer
- Always looking for ways to make better algorithms, better AI

AI Game Playing (1)

- Game playing is one of the most well studied areas of AI
  - Tree/Graph Search
  - Hill Climbing
  - Simulated Annealing



AI Game Playing (2)

Deep Blue (1997)

- Chenghui Cai & Silvia Ferrari (Duke)
  - Neural Network & Machine Learning Approach to Clue

The Goal

- Apply AI Game Playing to Clue
- Start with simple algorithms, move to more complex
  - Tree/Graph Search
  - Hill Climbing
  - Machine Learning

- Time permitting
  - Play my best algorithm against Duke's
  - Make an iPhone game in which the player can play against my algorithm(s)

Roadmap

- Start with tree search
- Implement the environment where these algorithms will play each other
- Attempt to define several potential “objective functions” (Winter Break)
- Implement Hill Climbing, try to plug in the objective functions
- Run the algorithms against each other & the Duke algorithm

Defining Success

- Finish at least two algorithms
  - Play them against each other, evaluate
  - Play the best one against Duke's algorithm
- Potentially make a game so you can play both of my algorithms

Challenges

- Implementing the environment for the algorithms to duke it out
- Getting the team from Duke to give me their implementation
- Determining the ‘indirect’ information and its use

Questions?