Solving problems by Searching

Problem Solving Agents

Standardized problems

- Grid world: 2-dimensional rectangular array of square cells
- Grid world: Sokoban puzzle
- Sliding-tile puzzle
- Rush hour puzzle
- 8-puzzle

Grid world: 2-dimensional rectangular array of square cells (Vacuum world)

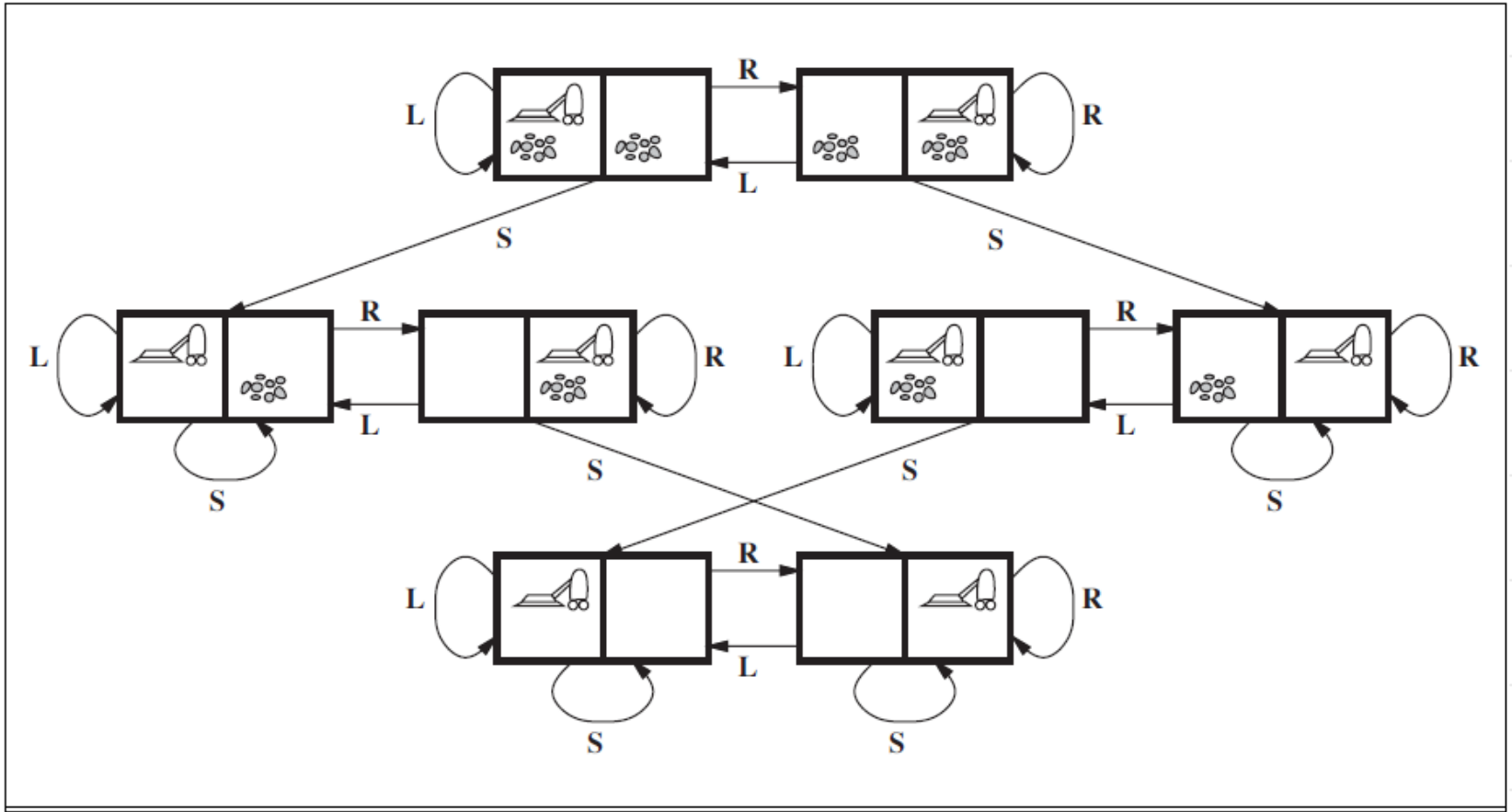

Figure 3.3 The state space for the vacuum world. Links denote actions: L = *Left*, R = *Right*, S = *Suck*.

Grid world: 2-dimensional rectangular array of square cells (Vacuum world)

- States
- Initial state
- Actions: Suck, move Left, move Right
- Transition model
- Goal state
- Path cost

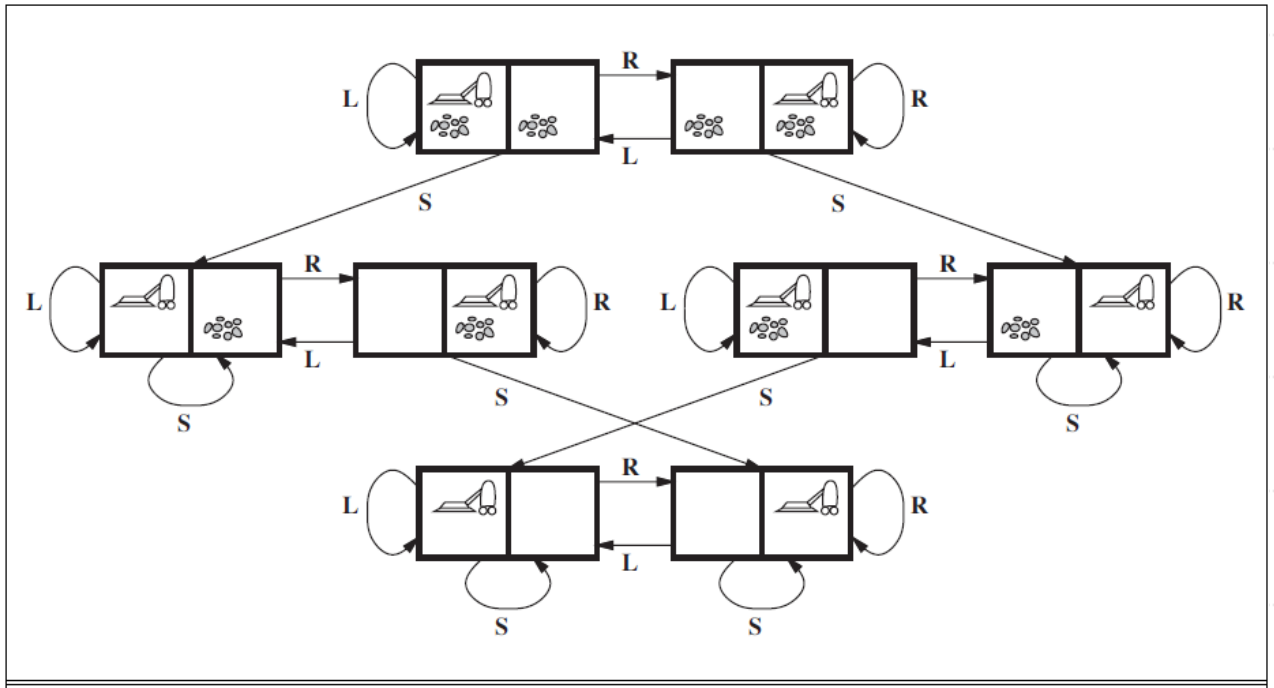

Figure 3.3 The state space for the vacuum world. Links denote actions: L = *Left*, R = *Right*, S = *Suck*.

Grid world

- Sokoban puzzle
- Sliding-tile puzzle
- Rush hour puzzle
- 8-puzzle

Grid world: 8 puzzle

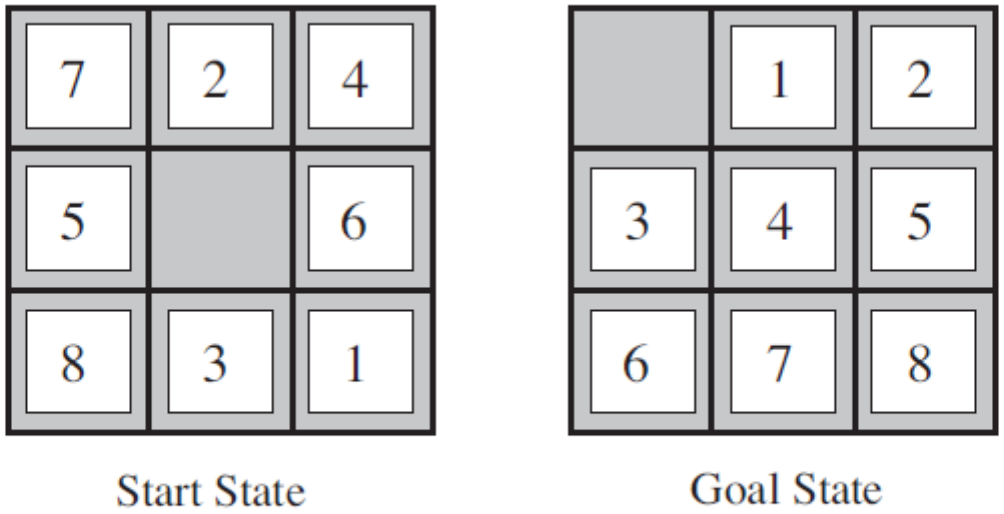

Figure 3.4 A typical instance of the 8-puzzle.

Grid world: 8 puzzle

- States
- Initial state
- Actions: Left, Right, Up, Down
- Transition model
- Goal state
- Path cost

Real world problems

- Route-finding problem
- Touring problem
- Travelling salesperson problem
- VLSI layout (cell layout and channel routing)
- Robot navigation
- Automatic assembly sequencing
- Protein design