Automatons

An automaton

- A mobile robot has the job of collecting empty soda cans in an oce environment.
- It has sensors for detecting cans, and an arm and gripper that can pick them up and place them in an onboard bin; it runs on a rechargeable battery.
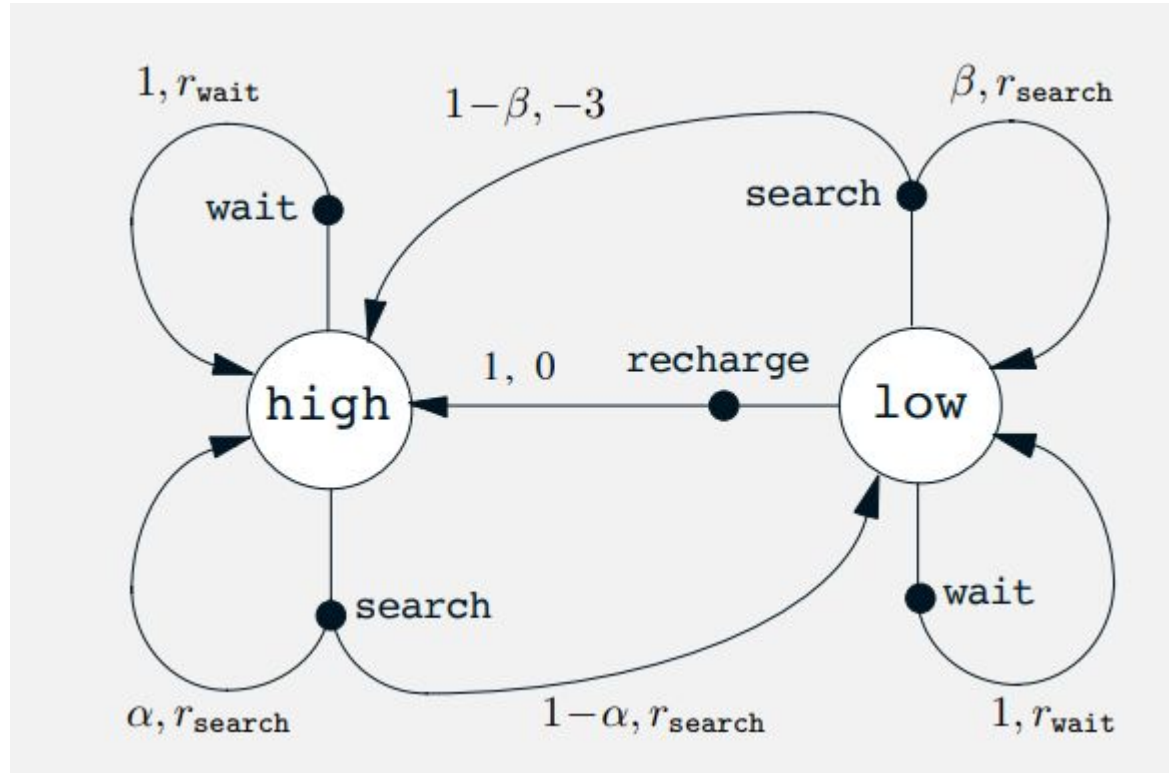
An automaton

- Assume that only two charge levels can be distinguished, comprising a small state set S = {high, low}
- In each state, the agent can decide whether to:
  - Actively search for a can for a certain period of time,
  - Remain stationary and wait for someone to bring it a can, or
  - Head back to its home base to recharge its battery

An automaton

- The rewards are zero most of the time, but become positive when the robot secures an empty can, or large and negative if the battery runs all the way down

An automaton

An automaton