Artificial Intelligence

Chap 2 – Intelligent Agents

Mar 3, 2025

Objectives

Practice and get familiar with the subject matters in Chap 2.

Questions

1. For each of the following agents, develop a PEAS description of the task environment:

   (a) Autonomous Mars rover

   (b) Smart Traffic Control System (managing traffic lights for optimal flow)

2. For each of the above agent, characterize the environment according to the properties given in Section 2.3.2 (slides pp. 18–23) , and select a suitable agent design.

3. Consider the vacuum cleaner, for which the agent is penalized one point for each movement.

   (a) Can a simple reflex agent be perfectly rational for this environment? Explain.

   (b) What about a reflex agent with state? Design such an agent.

   (c) How do your answers to (a) and (b) change if the agent's percepts give it the clean/dirty status of every square in the environment?

Submission

- **2025/03/09/ 24:00 (degrade by 10 points for each day delay)**

- Upload your PDF file to eeclass system