



Lecture Notes

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Chapter 1

Lecture 1: Intelligent Agent

1.1 What are agents in AI?

An agent is anything that can be viewed as **perceiving** its environment through **sensors** and **acting** upon that environment through **actuators**

Example of agents in human body: eyes, ears, nose, tongue, skin

Agent can have actions, e.g. Vacuum cleaner → Agent: Detect dirty space, Action: Clean

Type of Agents:

- Rule based Agent
- Logic based Agent

1.1.1 An Agent as a Logical System

Any logical system consists of a knowledge base & inference engine.

Example of Intelligent Agents in real world application:

- Traffic-Light Control
- Smart Meter
- Smart Home
- Smart Factory (SCADA)

1.2 Agents for Traffic-Light Control

Rule 1: IF (`current_state(P) ∧ state_counter(N) ≤ 0`)

1.3 A Smart Home as an Intelligent Agent

1.4 SCADA as an Generic Intelligent Agent

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