ARTIFICIAL INTELLIGENCE

The effort to automate intellectual tasks normally performed by humans.

RATIONALITY / RATIONAL

The ones on the right measure against an ideal performance measure, called rationality. A system is rational if it does the “right thing,” given what it knows.

NATURAL LANGUAGE PROCESSING

Natural language processing (NLP) is about developing applications and services that are able to understand human languages. Some Practical examples of NLP are speech recognition for eg: google voice search.

- **knowledge representation** to store what it knows or hears;
- **automated reasoning** to use the stored information to answer questions and to draw new conclusions.

Definition of intelligence

The ability to learn or understand or to deal with new or trying situations .

Machine Learning

Machine learning focuses on the development of computer programs that can access data and use it to learn for themselves.
(AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed.

Agent

An agent can be anything that perceives its environment through sensors and acts upon that environment through actuators.

COMPUTER VISION

Computer vision is a field of artificial intelligence (AI) that **enables computers and systems to derive meaningful information from digital images, videos** and other visual inputs.

ROBOTICS

manipulate objects and move about.robotics is to design machines that can help and assist humans.

RATIONAL AGENT

A rational agent is one that acts so as to achieve the best outcome or, when there is uncertainty, the best expected outcome.

Sensor

A sensor is a device that produces an output signal for the purpose of sensing a physical phenomenon.

Actuators

Actuators are **the components of machines that convert energy into motion**. The actuators are only responsible for moving and controlling a system. An actuator can be an electric motor, gears, rails, etc.

Percept

A percept is **the input that an intelligent agent is perceiving at any given moment.**

Agent Function

Describes the agent's behaviours.The agent function for an agent specifies the action taken by the agent in response to any percept sequence.

AGENT PROGRAM

The agent program implements the agent function.

PERFORMANCE MEASURE

The performance measure evaluates the behavior of the agent in an environment.

Rationality

• The performance measure that defines the criterion of success.
• The agent's prior knowledge of the environment.
• The actions that the agent can perform.
• The agent's percept sequence date.

DEFINITION OF A RATIONAL AGENT

For each possible percept sequence, a rational agent should select an action that is expected to maximize its performance measure, given the evidence provided by the percept sequence and whatever built-in knowledge the agent has.

PEAS

- Performance
- Environment
- Actuators
- Sensors

Structure of agent: agent = architecture + program

- • Simple reflex agents respond directly to percepts,Whereas
- model-based reflex agents maintain internal state to track aspects of the world that are not evident in the current percept.
- Goal-based agents act to achieve their goals, and
- utility-based agents try to maximize their own expected “happiness.”

• All agents can improve their performance through learning

THE END

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