UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN

Facultad de Ingeniería Mecánica y Eléctrica

Artificial Intelligence

Assignment 1

Artificial Intelligence: background and foundations

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Group: 002
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Artificial Intelligence

What is AI?

Acting humanly

The Turing Test approach

A computer passes the test if a human interrogator can't tell whether the written responses come from a person or from a computer.

The computer would need

1. Natural language processing
2. Knowledge representation
3. Atomated reasoning
4. Machine learning

The computer will need

1. Computer vision
2. Robotics

Thinking humanly

The cognitive modeling approach

Construct precise and testable theories of the human mind.

Thinking rationally

The "laws of thought" approach

Use logics to create intelligent systems by using precise notation for statements.

Acting rationally

The rational agent approach

Reason logically to the conclusion that a given action will achieve one's goals and then to act on that conclusion.

Foundations

Philosophy

1. Can formal rules be used to draw valid conclusions?
2. How does the mind arise from a physical brain?
3. Where does knowledge come from?
4. How does knowledge lead to action?

Mathematics

1. What are the formal rules to draw valid conclusions?
2. What can be computed?
3. How do we reason with uncertain information?

Economics

1. How should we make decisions so as to maximize payoff?
2. • How should we do this when others may not go along?
3. • How should we do this when the payoff may be far in the future?

Neuroscience

1. How do brains process information?

Psychology

1. How do humans and animals think and act?

Computer engineering

1. How can we build an efficient computer?

Control theory and cybernetics

1. How can artifacts operate under their own control?

Linguistics

1. How does language relate to thought?

Background

- The gestation of artificial intelligence (1943–1955)
- The birth of artificial intelligence (1956)
- Early enthusiasm, great expectations (1952–1969)
- A dose of reality (1966–1973)
- Knowledge-based systems: The key to power? (1969–1979)
- AI becomes an industry (1980–present)
- The return of neural networks (1986–present)
- AI adopts the scientific method (1987–present)
- The emergence of intelligent agents (1995–present)
- The availability of very large data sets (2001–present)

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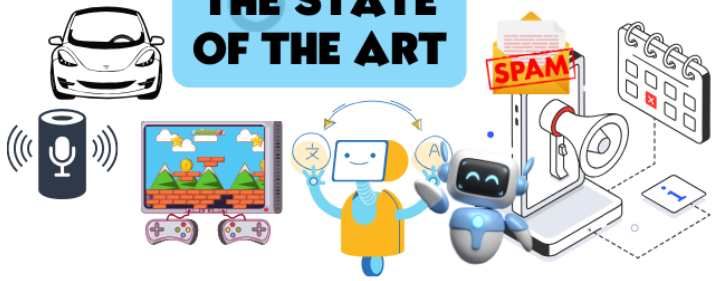

Bibliography

Russell, S. J. (2020). Artificial intelligence: a modern approach. Pearson Education, Inc.