English Courses

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Lesson 3 : Artificial intelligence -1-

Some translations

Artificial intelligence: Intelligence Artificielle

Smart contracts : Les contrats intelligents

Civil liability ; Responsabilité civile

Criminal liability ; Responsabilité pénale

Autonomous vehicles : Voitures autonomes (ou intelligentes)

Artificial Narrow Intelligence : IA étroite

Artificial General Intelligence : IA générale

Artificial Super Intelligence : Super IA

IA's Definition

Artificial intelligence (AI), in its broadest sense, is intelligence exhibited by machines, particularly computer systems, as opposed to the natural intelligence of living beings[1].

It is also defined as a process of imitating human intelligence which is based on the creation and application of algorithms executed in a dynamic computing environment.

To have an AI system, three components are required:

[1] Artificial intelligence, Wikipedia, https://en.wikipedia.org/wiki/Artificial_intelligence

• Computer systems

• Actionable data with management systems

• Advanced AI algorithms (code)

Birth and development of AI

Artificial intelligence was founded as an academic discipline in 1956. Alan Turing was the first person to conduct large research in the field that he called machine intelligence[2] which will become AI. The Dartmouth Conference, organized by American scientists John McCarty and Marvin Minsky, in 1956 put forward the term "artificial intelligence", proposed by John McCarty, and established artificial intelligence as a research discipline in its own right. .

The field went through multiple cycles of optimism, followed by periods of disappointment, known as “AI winter”[3]. Funding and interest vastly improved after 2012 when deep learning surpassed all previous AI techniques, and after 2017 with the transformer architecture. This led to the AI prosperous of the early 2020s, with companies, universities, and laboratories predominantly based in the United States making significant advances in artificial intelligence.

Classification of IA

There are three categories of AI according to strength

1/ **Artificial Narrow Intelligence** is categorized as weak artificial intelligence because it only specializes in a narrow range of settings or situations, like voice recognition or driverless cars, for example.

2/ **Artificial General Intelligence** is considered strong artificial intelligence because it works at a higher level, which corresponds to human intelligence.

3/ **Artificial Super Intelligence** means that a machine has super-intelligence or is smarter than a human.

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[2] Copeland, J., ed. (2004). *The Essential Turing: the ideas that gave birth to the computer age*. Oxford, England: Clarendon Press. ISBN 0-19-825079-7.

[3] Russell, Stuart J.; Norvig, Peter. (2021). Artificial Intelligence: A Modern Approach (4th ed.). Hoboken: Pearson. ISBN 978-0134610993. LCCN 20190474

The dangers of artificial intelligence

Threat to privacy due to the exploitation of personal data,

Threat on employment due to the gradual replacement of man by machine, first, and subsequently algorithms.

The loss of humanity, of sensitivity. Man absorbed by the machine, slave of the machine.

Ethically, the loss of human values. (examples of robots to accompany the elderly, between protagonists and antagonists)

Physical and mental health and integrity hazards. Artificial intelligence techniques are increasingly involved in the occurrence of damage, as evidenced by the census conducted by the National Highway Traffic Safety Administration and decomposing 130 accidents involving autonomous vehicles in the States-United from 20 July 2021 to 15 May 2022[4].

[4]National Highway Traffic SAfety Administration (U.S. Department of Transportation), Summary Report : Standing General Order on Crash Reporting for Automated Driving Systems, juin 2022, p. 3, disponbile à l'adresse suivante : https://www.nhtsa.gov/sites/nhtsa.gov/files/2022-06/ADS-SGOReport-June-2022.pdf