

The Imitation Game, The Language Game, The Learning Game and the Moving Game

Name: Gard Olsen

Username: Gardo

Concerning tasks about finding definitions for various terms there is nothing that states that you must explain how you chose your sources so the sources have been selected at random.

1. Search and find three definitions of AI, describe these briefly. Make references.

The online dictionary Meriam-Webster describes Artificial Intelligence as a branch of computer science dealing with the simulation of intelligent behavior in computers and goes on further to say the capability of a machine to imitate intelligent human behavior

<https://www.merriam-webster.com/dictionary/artificial%20intelligence>

A second definition according to Encyclopedia Britannica states the following: “the ability of a digital [computer](#) or computer-controlled [robot](#) to perform tasks commonly associated with intelligent beings.”

<https://www.britannica.com/technology/artificial-intelligence>

The third definition from ScienceDaily® refers to the American scientist John McCarthy who coined the expression back in 1955 stating the following: “the science and engineering of making intelligent machines.”

https://www.sciencedaily.com/terms/artificial_intelligence.htm

2. Search and find three definitions of Robotics, describe these briefly.

The first definition of Robotics is from Serious Science (Non-profit non-governmental project) who interviewed the robotics expert Mel Siegel, a professor at Carnegie Mellon University.

When asked the question about robotics he answered: “There are many definitions of a “robot”. The classical definition among my colleagues is “a robot is a machine that senses, thinks, and acts”. He personally added communicates to this term.

The second definition is taken from the online resource Whatis? Stating that Robotics is a branch of engineering that involves the conception, design, manufacture, and operation of [robots](#). This field overlaps with electronics, computer science, [artificial intelligence](#), mechatronics, [nanotechnology](#) and bioengineering.

<https://whatis.techtarget.com/>

The third definition according to the dutch foundation LEO, Center for Service Robotics they refer to I American physicist, engineer and entrepreneur Joseph Engelberger who states “I can't define a robot, but I know one when I see one.”

3. Search and find three definitions of Machine Learning, describe these briefly.

First definition according to Techemergence.com : The article arrives at this definition based on a definition by various researchers in the field:

“Machine Learning is the science of getting computers to learn and act like humans do, and improve their learning over time in autonomous fashion, by feeding them data and information in the form of observations and real-world interactions”

<https://www.techemergence.com/what-is-machine-learning/>

The second definition: According to Arthur Samuel an American electrical engineer and pioneer within AI coined the expression in 1959 stating : “Machine learning is a field of [computer science](#) that uses statistical techniques to give [computer systems](#) the ability to "learn" (e.g., progressively improve performance on a specific task) with data, without being explicitly programmed”

Samuel, Arthur (1959). "Some Studies in Machine Learning Using the Game of Checkers". IBM Journal of Research and Development. 3 (3): 210–229.

Third definition:

According to the online resource expertsystem.com “Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves.”

Alternative source: <https://www.recordedfuture.com/machine-learning-definition/> don't give their own definition

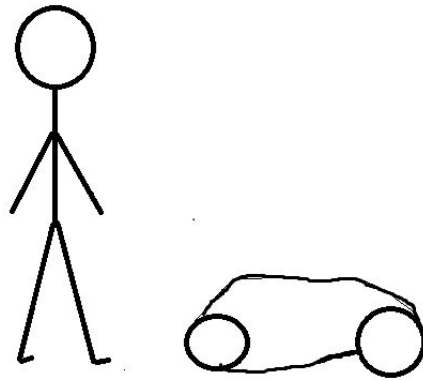
4. Write in three to five sentences the relationship between AI and Robotics as you understand this.

The confusion arises for most people due to the fact that the term artificial intelligence is often used when talking about Robotics and AI. However so far robots are still programmed to solve tasks and not able to think and learn for themselves, while AI has the goal to be an extension to the human thinking and problem solving where humans fail and make error.

5. Make a text to describe your own definition of AI. Explain briefly this definition.

Based on articles I have read my general impression is that AI is a method and tool to help people in research field and other fields where our own limitations start to appear for example in processing, analyzing, recognizing patterns in large data sets where we fail to see them and from these results provide solutions.

6. Make a drawing of an interaction with an AI - something that you imagine. Describe with some sentences of your drawing.



The image illustrated above depicts a person who has just programmed his robotic lawn mower and is ready to put it in to action. The subject is excited to see how the object will work.

7. Read the article: "On the Subject of Objects: Four Views on Object Perception and Tool Use" by Tarja Susi / Tom Ziemke. Write in your own words one page about the different perspectives on the human relationship with tools.

The article takes on the relationship between an agent and its environment. Four different concepts are being introduced namely **functional tone** (von Uexküll), **equipment** (Heidegger), **affordance** (Gibson), and **entry point** (Kirsh) to describe the aspects of the relationships between subject and object. The four terms when taken a closer look at have both similarities and important differences. The article central focus point is at some of the theories on the relation between subject and object and more specific artifacts and tools. As mentioned earlier the main focus of the article is on the subject-object relationship and to understand the artefacts and their use the article emphasize on the relation between subject and object and the way we see objects in our surroundings. as something we can use to our advantage or as a tool to help us.

One of the challenges is that the terms artefacts and tools have often been used at random and never been tied to coherent or unified definitions. One reason may be different perspectives among researchers and issues concerning context dependency.

Von Uexküll a Swedish-German philanthropist considers the role of the body when researching the relationship between subjects and their objects. A central point in his work is the idea of that each animal ascribes meaning to the physical objects it encounters, and thereby fits the world to itself, constructing its own subjective universe. He divides it into Umwelt: a subject's perceptual world (Merkwelt, everything that the subject perceives and his effector world (Wirkwelt, everything it does).

German philosopher Martin Heidegger touches upon the same subject as Von Uexküll, but the main difference is that he focuses on humans rather than animals and further went into depths on the social and cultural aspects. He was strongly opposed to the Cartesian thinking that there exists something mental (intentional, representational, etc.) constituting the relation between subject and object.

8. Select one of the perspectives from the article, and go into detail when you describe it.

I chose Gibsons view with a more detailed in depth analysis of his perspective:

Gibson places his affordances in the physical environment. The term **Affordance** is what the environment offers the individual. He did not believe that was a mental or psychological link between mind and body. Instead the perception is a direct process with no “middleman”. So each animal has its own niche in the environment, which is considered to consist of a set of affordances or as Gibson original statement says: *“the affordance of anything is a specific combination of the properties of its substance and its surfaces taken with reference to an animal.”* The subject-object is not important to Gibson but mutual relationship between animal and the environment. By saying 360 degrees he means to say that communication comes from all angles, nothing is space and not through a traditional channel

9. Select one other article from module 1, and write with your own words what this article is about.

I chose the article by Tom Ziemke(2007) “On the role of emotion in biological and robotic autonomy” The essence of the article sums up what the role of the robot in our evolving society might become. Should we be concerned that one day we have made robots that have become so intelligent that they will be self aware and surpass us in some areas but it depends on what areas. Will robots be a replacement of the shortcomings of us as individuals, or will they replace us entirely which could be seen as a genuine threat.

10. Select one documentary or a fictional film, book or game: describe with your own word how interaction with AI is portrayed in this work.

I chose the 1984 science fiction motion picture Terminator as a natural transition from the previous questions and also because it is one of my favorite movies. The story addresses one of the dangers when robots have advanced so much in its autonomy both biologically and when it comes to intelligence that it is on its way to surpassing humans in every way. The interaction between humans and the AI is not in the normal sense that it is useful and helpful but rather a physical threat to the humans. They must avoid interaction or any form of contact with these AI robots in order to survive. The plot depicts the extreme version of an interaction with the AI where it has instead become hostile.

11. Describe what you understand by autonomy; both human autonomy and machine autonomy.

Human autonomy is more dynamic and natural in its movements, where we have the full range of movements and our unique way of walking, while robots move statically and slower, but where the movements are also repetitive and more precise.

12. When was the term "AI" first coined? Please make a reference.

The term artificial intelligence was first coined by John McCarthy in 1956

Source: <https://courses.cs.washington.edu/courses/csep590/06au/projects/history-ai.pdf>

13. Articulate one question for the article "What we talk about when we talk about context" by Paul Dourish in the curriculum.

How is context a central issue for Human interaction design and for interactive systems more broadly?

14. Articulate one question for any other article in the curriculum.

In the article by Tom Ziemke "On the role of emotion in biological and robotic autonomy", 2007 I pose the question. What will the role of the robot be in the future?

References:

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On the Subject of Objects: Four Views on Object Perception and Tool Use" by Tarja Susi / Tom Ziemke. W <https://www.triple-c.at/index.php/tripleC/article/view/19>