

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

Disclaimer:

Dear peer-reviewer,

This assignment is far from finished. I contacted Jo regarding an extension of the deadline, and in order to keep the peer-reviewing process as streamlined as possible he suggested I hand in what I had done so far, and that I could continue to work on the assignment for iteration two and three. Feel free to contact Jo or myself if you have any questions regarding this arrangement. Sorry the assignment is so short, and thank you for your feedback.

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

The Merriam-Webster dictionary defines artificial intelligence as “a branch of computer science dealing with the simulation of intelligent behavior in computers”. (*Artificial Intelligence*, n.d.) This definition is quite general, but is useful in that it gives a basic insight into what AI is.

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

The Merriam-Webster dictionary defines robotics as “technology dealing with the design, construction, and operation of robots in automation”. (*Robotics*, n.d.)

As with the definition of AI, the dictionary definition of robotics gives basic insight into what the field is about. I feel like this definition is lacking in that it doesn't touch on robotics as a field of study, but defines the phrase only as the technology in itself.

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

Arthur Samuel, who is credited with coining the phrase in 1959, defined machine learning as the “field of study that gives computers the ability to learn without being explicitly programmed” (Munoz, 2014).

Finding sources for this exact wording was difficult, so the reference could be approved upon. I find the definition leaves something to be desired, as it contains phrasing that is not defined. What does it mean that a computer has “the ability to learn”, and how does this happen without it being “explicitly programmed”? I find myself thinking that surely the code needs to contain specifics on how the computer is supposed to learn, but that maybe the computer is then able to apply that code to several situations, and expand on its ability to learn over time.

Wikipedia defines machine learning as: “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” (*Machine Learning*, n.d.)

The definition is based on Samuel's 1959 definition (from Munoz, 2014), but adds that machine learning is a field within computer science that utilizes statistics. In general the definition is quite useful, in that it expands and gives some academic context to Samuel's definition. It does come across as more of a colloquial definition rather than an academic one, and I find myself wondering at the definition of "computer systems".

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

The best way to describe how I view the relationship between AI and Robotics would be by describing them as "mind" and "body". AI is a field concerned with computer learning and decision making, trying to emulate a human, or at least intelligent, mind. This does not need to involve any perception of, or movement in, physical space. Robotics is a field concerned with robots, which I understand as physical objects usually involving sensors and movement, like a "body". AI and robotics can exist independently of each other, but can also be combined in autonomous robots.

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

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

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.

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

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

Does AI make PD obsolete? (2016) Bratteteig, T. & Verne, G.

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.

The feature film *Her* (2013) is an imagination of a near future where an AI operating system (OS) personalized for each user, called OS1, has just been launched. We follow professional letter-writer Theodore (Joaquin Pheonix) as he purchases, and begins interacting with the OS Samantha (voiced by Scarlett Johansson). Samantha interacts with Theodore through a spoken interface, but being his OS she is also omnipresent on his version of a smartphone, and in his

calendar, email etc. They eventually develop a romantic and sexual relationship, and Theodore introduces Samantha as his girlfriend to close friends and colleagues.

Interestingly Samantha does not have any kind of physical avatar, nor is she connected to any robotics that would enable her to interact with physical space - she is simply "the voice in his computer". The film explores themes of connection and relationships, both between humans, and between humans and AI. How do we live together, learn from each other and evolve as consciousnesses (both human and otherwise)? The film is interesting from an AI standpoint because it imagines "realistic" issues that could arise in a relationship between an autonomous non-human intelligence and a normal person - such as whether Samantha exists for herself or for others. Is she a personal assistant, an OS, a friend, a lover, some combination of the aforementioned, or perhaps neither? What are the ethics of being emotionally involved with an AI, and should it be treated like a real person? And what happens when the AI has needs and capabilities that evolve beyond human comprehension?

Ultimately the film is a somewhat sad, but beautiful reflection on what it means to be "alive" and connected to others.

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

I understand human autonomy as the capability and ability to make decisions regarding one's own life. Realistically I think these decisions are often influenced by factors around us, both known and unknown to us, but human autonomy ultimately boils down to being able and having the freedom to make one's own decisions.

I understand machine autonomy to relate to a machines "independence" in some way. This could mechanically mean simple actions or movements that happen without or with limited human involvement, such as a watch. In terms of robotics and AI I understand it as a decision making process, where the AI or robot can make a decision and act on it in a given situation, without being told by a human what to do.

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

The term AI was first used in 1956 by John McCarthy at an academic conference covering the subject (Smith, McGuire, Huang & Yang, 2006).

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

## References

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