

Individual assignment – HAI

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Content and form

1. *Search and find three definitions of AI, describe these briefly. Make references.*
Mirriam Webster Dictionary:
1 : a branch of computer science dealing with the simulation of intelligent behavior in computers
2 : the capability of a machine to imitate intelligent human behaviour

Encyclopedia Britannica:

3: the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.

The first definition is related to the work of creating a thinking machine, while the latter 2 are related to the result or product of such work.

2. *Search and find three definitions of Robotics, describe these briefly.*
1) Mirriam Webster Dictionary: technology dealing with the design, construction, and operation of robots in automation
2) Encyclopedia Britannica: Design, construction, and use of machines (robots) to perform tasks done traditionally by human beings.
3) Oxford Living Dictionaries: The branch of technology that deals with the design, construction, operation, and application of robots.

Although only Britannica indicates that robots is made to perform work usually done by humans, all agrees that robotics is related to design and construction of robots or automated machines.

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

I understand Artificial Intelligence as machines ability to think, learn or solve problems theoretically, while robotics for me is concerned with machines that can do more or less complicated tasks usually without direct human control. Autonomous robots with the ability to respond or react independently combines the two categories, making intelligent robots. The level of sophistication of sensing it's surrounding and respond appropriately to solve problems independently could suggest that stationary machines can be robots based on the fact that humans without movement are still humans, but I prefer to make the distinction that robots can move in the real world.

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

Artificial Intelligence or AI to me is machines that are able to gain knowledge and skills, and furthermore use what it has learned to analyse or solve new situations or problems. This is based mainly on my perception of what intelligence is.

5. Make a drawing of an interaction with an AI - something that you imagine.



You realize that these human controlled death traps have been banned for some time now mr. Deberitz. Would you please step out of the vehicle?

6. 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.
7. Select one of the perspectives from the article, and go into detail when you describe it.

The authors discuss four different approaches to the relationships between mainly inanimate objects and animals or people, which shows various ways of relating to objects. Although very philosophical and seemingly impractical, it does discuss different ways of relating to things ranging from the idea that objects are nothing in themselves but takes on different meanings or uses (functional tones) based on the animal's mood or needs.

Related to this idea is the view on objects as equipment, and things being of use to humans as such. Although the same object can be used for different tasks, the fact that they are kept close by or on one's person is essential for the idea of things as equipment.

A more balanced view on things, is the concept of things having affordances. In essence - ways an animal can be able to use the object. In this idea, objects have certain physical aspects that can be used by different animals in various ways.

The view of objects being entry points into actions for animals, the object is given a more active role than I would normally attribute to things. It invites the animal to use the object, rather than the animal having a need and the object filling a need.

Although I tend to relate to objects as independent entities in their own right, and understand that they can be used for different purposes if the need should arise it is interesting to think about how we relate to our surroundings.

I find it intriguing that the concept of things as entry points to experiences or actions rather than objects having affordances has emerged as an idea. It does indicate that animals like us are influenced by objects, not just that we use them. The examples given are mostly made objects designed for a specific purpose, or to help with a number of tasks, and is somewhat removed from the affordances of naturally occurring objects or more simple tools.

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

In her article "Subject Objects" Lucy Suchman looks into different instances of humanoid robots, and their interaction with humans. Both interested in how we humans try to create machines in our likeness, and a proponent of making machines more like humans, she presents interactions with the robots Mertz, Kismet and Robota.

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

In the 1983 movie Wargames the military supercomputer W.O.P.R designed by Dr. Stephen Falken to be a strategic and partially autonomous defense system accidentally is hacked by the computer savvy high school student David Lightman played by Matthew Broderick looking for computer games.

Based on traditional logical, apparently self-training, gaming AI technology the War Operating Plan Response machine is made believable through primary access through contemporary microcomputer terminals using keyboards and monochrome green screens and dial-up modem connection. However it is anthropomorphized through the use of speech synthesizer speakers connected to Lightman's computer, and the student talking to the computer as he types. The machine is nicknamed Joshua by the young student, after he discovers dr. Falken's has left a backdoor to the system using his deceased son's name for a password.

Starting a game of simulated thermonuclear war with Joshua, David almost brings about the end of civilization as we know it because the machine is connected directly to all the nuclear missile silos and doesn't really know how to differentiate between reality and a digital simulation. Luckily the machine can learn quickly the concept of tie through playing tic-tac-toe against itself, initiated by Falken and Lightman, and transfer that knowledge to the global thermonuclear war simulation and realizing that there is no way to win except not to play.

During the 1980's there were quite a few sci-fi films warning us that giving machines control of weapons or too much autonomy. The Terminator series of films featuring evil killer robots controlled by an AI that has realised that humans are a threat to the planet has been going since the 1980's. And the evil AI named HAL in 2001 a Space Odyssey is classic.

W.O.P.R./Joshua in Wargames is different in that it is not evil or even hostile, nor are the people that has created or implemented it. It is just a cautionary tale that is important to remember that things may go terribly wrong if you rely too much on autonomous technology that does not have the "fault" of feeling and making decisions that are not purely mathematical.

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

Autonomy in essence is the opportunity to make independent decisions and implement them to the best of one's ability. It doesn't necessary imply reasoning or logical intelligence, rather the ability to act independently of external command.

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

Apparently the concept of artificial intelligence dates back to the ancient Greek myths of a blacksmith that had created living machines of gold to help him work, that could walk and talk like humans.

However the computer science term Artificial Intelligence was coined in 1955. Websters dictionary

12. *Articulate at least one question for one of the articles in the module.*

Schulz, Classifying Human and Robot Movement at Home and Implementing Robot Movement Using the Slow In, Slow Out Animation Principle

How would you create a robot that would appear more like a human, using principles from animation?