

## IN5480 individual assignment iteration 1

The concept of AI is nearly as old as the modern computer. Already in the late 40s, computer science pioneers like Alan Turing was public talking about computers eventually have intellect matching humans.

And in the early 50s the fields of cybernetics, defined by Norbert Weiner as “the study of control and communication in the animal and machine” (Jonathan Grudin, 2009). Was discussed in New York on a series of conferences. This; together with dissuasions about neural networks models became the basis for mathematician and logician John McCarty to Coin the term artificial intelligence in 1956. Today artificial intelligence, machine learning, deep learning and neural networks are often used interchangeably even though they often contain very similar properties. They simulate a kind of intelligence or a way to learn new information.

The development of AI has had many ups and downs during the 20<sup>th</sup> century. A mix of founding, interests of researchers and technical limitations has made booms and droughts. One of the first big booms for AI came in the 60s. With the cold war and the space race kicking of, both the US and UK founded a lot of scientific research, and AI was one of them.

Researchers and scholars were optimistic and in 1965 I.J Good proclaimed: “More probable than not, within the twentieth century, an ultraintelligent machine will be built and it will be the last invention that man need to make.” (Jonathan Grudin, 2009). Marvin Minsky and several other researchers agreed that a machine with human level intelligence would arrive by 1985. This did not happen, but we can easily see the influence their statements have had on media and popular culture.

### Some definitions of AI

“[...] a machine with the general intelligence of an average human being. I mean a machine that will be able to read Shakespeare, grease a car, play office politics, tell a joke, have a fight. At that point the machine will begin to educate

itself with fantastic speed. [...]” - Marvin Minsky (Jonathan Grudin, 2009 / Time Magazine, November 20, 1970)

Minsky’s quote fit well in the optimism around technology and science present in the 70s. The seed of innovation since the world wars astonishing, and many believed that no technology was too far fetched to be invented in just a few decades. As I interpret Minsky, he talks about an AI that behave and act like humans. Has needs for emotional stimulation such as being capable to be angry, have a fight, the joys of a joke and play office politics.

“AI is a subfield of computer science aimed at specifying and making computer systems that mimic human intelligence or express rational behaviour, in the sense that the task would require intelligence if executed by a human.”  
(Bratteteig and Verne, 2018)

As a contrast to Minsky, Bratteteig and Verne have a view of AI from a more modern viewpoint. They don’t talk as much about the AI having real human capabilities. But talk more about AI as an imitation of human behavior. If we want to put an unsentimental label on it: Minsky talks about AI like it has a soul. Bratteteig and Verne does not.

“The capacity of a computer to perform operations analogous to learning and decision making in humans, as by an expert system, a program for CAD or CAM, or a program for the perception and recognition of shapes in computer vision systems”. (dictionary.com, 2019)

This last definition of AI is very generic, as it’s from a dictionary. But this last one is more about how a system can take decisions like a human, without being one.

I think AI is about how a computer can acquire new skills, or make decisions without the need for human input. And the possibility to adapt its current knowledge to new uses and use these skills in a human like behavior.

## Siri by Apple

Siri, by Apple, is maybe one of the most famous AI “assistants” in the world. And as many other products made by Apple, they try to present it as some technological magic. They present Siri as a convenience you cannot live without. Siri’s slogan at the moment is: “Siri does more than ever. Even before you ask. “ In many ways, they don’t talk about the tech behind Siri, they don’t even mention AI on its product page. Apple only focus on the many features, how easy the product is to use, and the safety of the product.

## AI in Westworld

In the TV series Westworld is about a theme park made to look like an old western movie. The park is filled with robots, who all have AI personalities who play a role in the parks narrative. In the early episodes of the series, we see how the humans in the park behave around the robots. Many, if not most, use their time in the park to live out an western fantasy, without any consequences. They shoot, kills and rape as many robots as they can in the park. Just because they can. It's a sinister viewpoint; to infer that most humans turn into power hungry psychopaths just because they cant get punished for their actions.

Later in the series the show explores the concept of sentience, and if AIs can develop free will. If you look at the interactions between robots and humans, you can clearly see it changes over time. The humans treat them more as a fellow man after the inevitable uprising.

## Robots

The Czech word for “forced labour”, and was first used in the play: R.U.R by Karel Capek.

“A machine resembling a human being and able to replicate certain human movements and functions automatically.” - lexico.com, 2019

“A robot is a physically embodied artificially intelligent agent that can take actions that have effects on the physical world”- Anca Dragan, roboticist of UC Berkeley

A robot is a kind of machine who allow a computer to move in a 3 dimensional space. This may allow the computer to do not only calculation tasks, but also physical tasks. A robot is is the embodiment of a computer. If an AI is the “brain” on a machine a robot is the “body”.

Maybe the most contemporary robots in society today, is the robot cleaners. Many have robots vacuums, and they have sensors that make them capable to navigate rooms and open spaces. Different models have different strategies on how they move, but most modern models uses AI or other algorithms to find an optimal path for cleaning. Usually humans don't interact a lot with vacuum cleaners, mostly because they are designed to run when the owner isn't home.

## Universal design

Universal design can be defined as the design of products and environments to be usable to the greatest extent possible by people of all ages and abilities. (Story et al., 1998) This definition fits my view of universal design well. Universal design is about including as many as possible, and be conscious of the restrictions and exclusions of groups inherit in the design of a product or environment.

It's possible to use AI to analyse human emotions and reactions. In the medical field, it may be used to help patients with expression impairment, like cerebral palsy to express themselves. We can use AI to reduce the miscommunication between patient and caretaker.

In many ways, AI today are exclusive. Many face recognition softwares have a hard time to recognise non-white people. And voice controlled systems are often only usable if you have a good english accent. On the other side; if AI are design the right way, we may manage to remove a lot of biases and executions made by humans today. Like the possibility to make websites more accessible to all, or AIs who make decisions without individual biases, like humans.

## References

- Bratteteig, T., Verne, G., 2018. Does AI Make PD Obsolete?: Exploring Challenges from Artificial Intelligence to Participatory Design, in: Proceedings of the 15th Participatory Design Conference: Short Papers, Situated Actions, Workshops and Tutorial - Volume 2, PDC '18. ACM, New York, NY, USA, pp. 8:1–8:5. <https://doi.org/10.1145/3210604.3210646>
- Jonathan Grudin, 2009. AI and HCI: Two Fields Divided by a Common Focus. AI Mag. 30. <https://doi.org/10.1609/aimag.v30i4.2271>
- Story, M.F., Mueller, J.L., Mace, R.L., 1998. The Universal Design File: Designing for People of All Ages and Abilities. Revised Edition. <https://eric.ed.gov/?id=ED460554>.
- “The Origin Of The Word ‘Robot.’” Science Friday, 2011, [www.sciencefriday.com/segments/the-origin-of-the-word-robot/](http://www.sciencefriday.com/segments/the-origin-of-the-word-robot/). Accessed 27 Sept. 2019.
- Dictionary:  
<https://www.dictionary.com/browse/artificial-intelligence>  
Accessed 27 Sept. 2019.