Concepts, definition and history of interaction with AI

How did AI come about & history about AI
When, and by whom, was the term first used?

The term and field of artificial intelligence was first introduced and founded at a workshop in 1956 at Dartmouth College in New Hampshire, USA, but it can also be traced further back to philosophers, mathematicians, psychologists trying to describe and find out how machines and computers could be used to perform tasks previously only done by humans.

American mathematician and logician John McCarthy was the one that came up with the term at Dartmouth in 1956. The term gained traction due to the workshop participants optimistic estimate on how important and significant AI would be.

Three different definitions of AI. Describe these three definitions(When, by whom and in what community)

Merriam-Webster, the trusted American dictionary defines AI as:
- *The capability of a machine to imitate intelligent human behavior*
  (updated in september of 2019)

Encyclopædia Britannia is a general knowledge encyclopedia which defines AI like this:
- *The ability of a digital computer or computer controlled robot to perform tasks commonly associated with intelligent beings*
  (updated in june of 2006)

John McCarthy, the man that coined the AI discipline, defined it himself:
- *It is the science and engineering of making intelligent machines, especially intelligent computer programs*
  (1956)

I feel like all these definitions says the same thing, although there is a difference in how technical and specific they are. Two of them are from websites that have definitions of thousands of things and words, therefore they have to be quite uncomplicated for everyone to understand them. Regardless I feel like they all describe AI well.

Make a definition yourself - and describe and explain your definition.

- *AI is when a digital tool/computer has the ability to perform actions which mirrors actions performed by intelligent humans.*

I appreciated the definition by Encyclopædia Britannia and therefore my definition resembles theirs. The reason why I think it's a good definition is because it's quite relatable to people's perception of how AI works.

Find one contemporary company that work with AI and describe how this company present AI on their web pages. In what way does this company talk about AI, as a product, as a service, framework or "idea"?

In the career section of their website DNV GL has a page about artificial intelligence. They talk about AI as a part of the services they provide today and as a field which will continue to grow with great speed in the coming years, both in DNV GL and in other companies and industries. Additionally they talk about the what AI is and pitfalls within AI.

Find a documentary, film, book or game that includes/is about AI and describe how human interaction with AI is portrayed.

When the film 'Her' came out in 2013 I watched it together with my IT-class in upper secondary school. The film is all about a man called Theodore and how he develops a connection with his operating system. The interaction with AI in 'Her' is almost exclusively oral, and is portrayed as a seamless interaction where there is second to none bugs. The plot of the film is set to 'some time in the near future' and we can begin to believe that AI-technology has come as far as the movie depicts. The interaction between Theodore and the operating system is so human-like that he almost loses sight of reality and develops a romantic relationship with the system.

Human Robot Interaction

First, write a section about how the word Robot came about.

The origin of the word robot comes from the Czech word 'robota'. 'Robota' translates to slave labour. It first appeared from a play called R.U.R and which was made by writer Czech called Karel Capek.

Two different definitions of robot. Describe and explain these definitions. Based on this definitions, make one definiton yourself, and describe and explain this definition.

Merriam-Webster, the American dictionary:
- *a machine that resembles a living creature in being capable of moving independently (as by walking or rolling on wheels) and performing complex actions (such as grasping and moving objects)*
  (updated in september of 2019)

Anca Dragan, roboticist of UC Berkeley:
- *a robot is a physically embodied artificially intelligent agent that can take actions that have effects on the physical world*
  (august of 2017)

My definition of robot is:
- a intelligent computer/machine with the ability to move parts of it's build in order to perform tasks and interact with humans

I feel that the Merriam-Webster definition is a way too specific definition, because in my eyes being a robot doesn't necessarily mean that it has wheels or is walking. Ancas definition is much broader and fits the image I have of robots to a greater degree.
In my definition I chose to focus on that a robot is perceived as a machine or a computer which is included in a sort of body or build where parts of it can move to perform actions and interact with humans. The definition fits the image I have of robots in my head.

Discuss the relation between AI and Robots. Is "a robot" different from "an AI"? In what ways are they different and similar? Bring in the definitions that you described earlier about robots and AI for this discussion.

The main difference I would like to emphasize is that a robot is viewed as more of a physical thing that has the ability to move, rather than just a program within a computer or another digital platform. There are words that are common in the both the definitions of 'Robot' and 'AI', such as 'intelligent', 'artificial', 'performing actions/tasks'. There is definitely common factors between them, but as mentioned also big differences.

Find one contemporary physical robot, either described in a research article - or a commercial robot, and describe how this robot moves and how a human user is interacting and using the robot in a specific situation.

When I studied at OsloMet they had cooperation with IBM where they placed a robot called Pepper on campus. Pepper is a semi-humanoid robot, meaning that a human has to control it and make functions for it. It has a tablet on it's chest and has the ability to roll around and move it's hands. The main purpose of Pepper on campus was to function as a receptionist or guide at the entrance. Pepper was also used as a chatbot that you could interact orally with. As far as i know there was not programmed many tasks where Pepper actually had to move physically.

Universal Design and Interaction with AI

Please find and describe a definition of Universal Design. Explain this definition, how you understand what Universal Design is about with respect to inclusion.

George Anthony Giannoumis, associate professor at OsloMet:
-   Universal design is the idea that we can design technology that everybody can use equally.

What Anthony really touches upon here is that technology should be designed in a way that is universal to everyone. This means that there should be no technology which discriminates users based on the way it's designed or made.

Describe the potential of AI with respect to human perception, human movement and human cognition/emotions. You are encouraged to use examples.

There are huge potential when it comes to human interaction with AI. Using AI to analyze and understand emotions, actions and other human characteristics is very likely to have very positive effects on efficiency and accuracy in a lot of industries where AI can be implemented. Examples of an industry where AI could be implemented to analyze human emotions is the car industry. What if your car could notice that you nod off or that you are distracted in some other way and act accordingly with that information? That would be great improvement in road safety.

Describe the potential of AI for including and excluding people. You are encouraged to use examples

One of the first thing that comes to mind when I think about AI exclusion is that AI has the potential to be racist. There are several examples of this in facial recognition software which simply doesn't recognize people if their skin tone is darker than the skin tone of the ones that made and tested the software. This is of course just a example of what can happen if AI develops bias. On the complete opposite end, AI can have positive effects when it comes to inclusion. If AI is developed in a way where inclusion is in mind from the very start there are settings where AI outperforms humans. A example of such a setting is when a human has to physically assess you and take action/choices made up how they view your appearance and also the prejudice that human has towards people with that . AI doesn't necessarily have the same opportunity to be discriminatory towards people in the same way that a human does. It all comes down to how the AI is made.

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