

IN5480 Individual assignment fall 2019

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1 Concepts, definition and history of interaction with AI.

1.1 How AI came about

The term Artificial intelligence was first used by the American mathematician and logician John McCarthy in 1956. He brought together a group of researchers from different disciplines to a workshop at Dartmouth College. From the workshop a paper was published where the definition was written.

1.2 Definitions

1.2.1 Definition 1

AI is the science and engineering of making intelligent machines especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable. (McCarthy, 1998)

This definition was written by John McCarthy in the paper from the workshop held in 1956. This is the first definition of the term “artificial intelligence”

1.2.2 Definition 2

The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages..

This is the definition from The Oxford English Dictionary (OED). Here the term is presented as a theory. The definition focuses on the technology's ability to do human-like tasks.

1.2.3 Definition 3

Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.

This definition is the start of an article written for the encyclopedia Britannica. This definition also focuses on the technology's ability to do tasks, but classifies the tasks as commonly performed by “intelligent being” rather than just “humans”.

1.3 My definition

AI is software and compute systems that is able to perform human-like tasks on its own.

This definition was made by combining the other definitions to my own.

1.4 Company that work with AI

Grammarly is a technology company that provides different ai powered products like text editors and browsers extensions for grammar. Grammarly present AI clearly in their main tagline on their website: Compose bold, clear, mistake-free writing with Grammarly's AI-powered writing assistant. In the explanations of their services on their page the word “ai” is often used as well as talking about their “powerful algorithms”. In their blog post: “How We Use AI to Enhance Your Writing” They explain how ai is used and why they chose this approach as well as the technology behind grammarly with advanced system that combines rules, patterns, and artificial

intelligence techniques like machine learning, deep learning, and natural language processing.

1.5 The us of AI in entertainment

Humans is a tv series from 2015 set in a parallel present where highly functional human-like robots exist. These robots are used for several purposes like being servants in homes to being used in illegal fighting rings. The characters struggle with dealing with robots and how to act towards them. The series explores themes like ai and the social impact of anthropomorphic robots with some humans building emotional relationships to the robots while others treat them like machines. It also explores the science fiction theme: what if the robots gain consciousness. This fits well with the series tagline: Made in our image. Out of our control.

2 Robots and AI systems

2.1 The word “robot”

The word *robot* comes from the old church Slavonic word “robota”, meaning “servitude” or “forced labor”. This originates from the central European system in which rent was paid by a tenant by forced labor or service. Karel Čapek introduced the variation robot”, from the latin root for labour “labori”, in his play R.U.R Rossum's Universal Robots, 1920) where a company mass produces workers made from chemistry, that perform the mundane tasks that humans don't want to do.

2.2 Definitions

2.2.1 Definition 1

A machine capable of carrying out a complex series of actions automatically, especially one programmable by a computer. (The Oxford Dictionary)

This definition focuses on the automation of the machine. The Oxford Dictionary has another definition that focuses more on robots in science fiction with the robots resembling human beings.

2.2.2 Definition 2

Robots are machines that can be used to do jobs. Some robots can do work by themselves. Other robots must always have a person telling them what to do. (NASA, 2009).

This definition define robots by their use. Then the definition is split into independent and dependent.

2.3 My definition

A robot is an artifact made by humans designed to perform a spesific task automatically.

This definition was made based on my knowledge acquired throughout this course.

2.4 The relation between AI and Robots

While a robot is an artifact designed and programmed to perform specific tasks, AI can be software. A robot can be powered by AI, but AI does not have to be a part of a robot

2.5 A specific robot

When thinking about commercial robots that we use in everyday life, the robotic lawn mowers comes to mind. These robots uses sensor to detect obstacles. These robots have one specific task: moving the lawn. They follow preprogrammed instructions, but also a certain amount of ai to figure out what to do and how. Many people that

buy these lawn mowers might think that all of their work is over, but that is not the case. To make sure the robot functions you have to facilitate its use by setting up the perimeter and make sure that there are no obstacles in the grass regularly.

3 Universal Design and AI systems

3.1 Definition

An approach to the design of products, buildings, and public spaces that enables the participation of all members of society, (The Oxford Dictionary)

Universal design focuses on inclusion. It is about designing for all people regardless of their abilities and disabilities, including all and meeting the needs of everyone who wishes to use the design. Universal design was driven forward by the social changes within our society in respect to civil and human rights in the 20th century, with a focus on equal rights and anti-discrimination.

3.2 The potential of AI

1. With respect to human perception, human movement and human cognition/emotions.

AI can be extremely useful in including users with disabilities both cognitive and physical, having a robot that respects a persons difficulties. Robots like the seal "Poro" is being used to treat elder with dementia by acting as a something displaying emotions that they can take care of

2. For including and excluding people.

AI can easily be used to exclude people even without the designers doing it on purpose. AI is made from humans "teaching" the AI with the use of dataset. If these datasets are not include the AI won't be either. An example of this is facial

recognition software where the ai is not able to detect all races because the dataset dit not have enough inclusion. This can be looked at the other way where the AI is designed to be inclusive and then creating a software that everyone can feel represented in and be able to use.

4 References

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