

Is artificial intelligence possible?

Project Specification DD143X

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Summary

Artificial intelligence have been fascinating people and been the basis for many books and movies. But is it possible? This document briefly discuss the idea of artificial intelligence and debate the meaning of the lofty term “intelligence”. This document also describes the aim of this project, which is to summarize the various theories, proofs and argument for and against the possibility of artificial intelligence, as well the plan and time schedule for this project.

Background

Background history

Is artificial intelligence possible? Man has for a long time been intrigued by the thought about creating artificial intelligence or life. It's a constant reoccurring theme in books and movies. In Mary Shelley's *Frankenstein*, the monster can be considered to be a created intelligence, a created man. In Alchemy there existed an idea of Homunculus, an artificially created man.

Yet at the same time people seem to fear the thought of an artificial intelligence, with movies and books constantly telling stories about how robots will come to the conclusion that man is obsolete and hence should be eradicated. One of the earliest movies displaying this animosity towards artificial intelligence is Fritz Lang's *Metropolis* from 1927.

But before we get too far ahead of ourselves; is artificial intelligence even possible? The question whether or not a machine can be intelligent has been hotly debated since the inception of the term "artificial intelligence" (and indeed well before that). Some of the most outspoken opponents have been the American philosopher John Searle, known for his "Chinese Room" thought experiment, and the British mathematician Roger Penrose.

It's quite hard to even define what artificial intelligence even means seeing as it contains the word "intelligence" which in itself is hard to explain. The online Merriam-Webster's dictionary defines "intelligence" as the following:

Definition of INTELLIGENCE

- 1 *a (1)* : the ability to learn or understand or to deal with new or trying situations : [reason](#); *also* : the skilled use of reason
 (2) : the ability to apply knowledge to manipulate one's environment or to think abstractly as measured by objective criteria (as tests)
 b *Christian Science* : the basic eternal quality of divine Mind
 c : mental acuteness : [shrewdness](#)
- 2 *a* : an intelligent entity; *especially* : [angel](#)
 b : intelligent minds or mind <cosmic *intelligence*>
- 3 : the act of understanding : [comprehension](#)
- 4 *a* : [information](#), [news](#)
 b : information concerning an enemy or possible enemy or an area; *also* : an agency engaged in obtaining such information
- 5 : the ability to perform computer functions

If we take it to mean as number five on the list then computers are already intelligent. The fourth is just another way of saying information and thus does not apply in this situation. The second uses the word "intelligence" to explain "intelligence" which is a paradox. The first listing contains the third so I'll leave it out of consideration.

The first listing, is divided by "or". A person seemingly only has to learn something but not understand

it to be considerate intelligent by this definition. However, let's say that a person has to be able to learn **and** understand **and** to deal with new or trying situations. This one could claim is already possible in the field of machine learning. You can teach a computer to learn to play backgammon having no knowledge of the game before, and even teach it to play it better than most humans. This seem to fulfill the requirements of intelligence, furthermore seeing as how it plays it even better than most humans, is it therefore more intelligent than a human?

The second part of the first listing; the ability to apply knowledge to manipulate it's environment. You can make a robot learn to walk, it's body being the environment, or teach it to handle objects. Does this make it intelligent?

The last part of that sentence is too unspecified to serve as guidance to what constitutes intelligence. Moreover intelligence quotient tests have received a lot of criticism partly because IQ tests only examine particular areas embodied by the broadest notion of "intelligence".

In 1983 Howard Gardner proposed a the theory of multiple intelligences to analyze and better describe the concept of intelligence. For example a person can be considered to be an idiot yet still be a genius on the soccer field or with a violin in their hands.

This debate has yet to be resolved and thus arguments for or against the possibility of artificial intelligence has to be preceded by a definition of what the writer means with "intelligence".

Statement of the problem

Is artificial intelligence possible? What counts as intelligent?

In this project I will try to give a definition of artificial intelligence, summarize the various views on about it and investigate which is the most prominent theory at the moment.

Project plan

First I will gather as much relevant information and consult philosophers and professors. I'll try to summarize the main views about artificial intelligence and cite the theories and proofs.

Thereafter I'll form my thesis statement and give my view on artificial intelligence.

Time schedule

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|---------------------------------------|----------------|
| – Project specification document | 9 feb |
| – Gathering material and consultation | 14-20 feb |
| – Summarizing and forming thesis | 21-27 feb |
| – First draft | 3 mar |
| – Second draft | 10 mar |
| – Finalizing the document | 11 mar - 1 may |
| – Final document | 2 may |

References

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