Robots, Are They Overlords or Serf-Laborers?

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Abstract

Of all the tools and methods invented by humankind to tame nature and make use of its challenges, the invention of computer has had the greatest impact on society. Coupled with the Internet, computers have changed the way billions of humans work, entertain themselves, and think. Since the rise of the computers, Artificial Intelligence (AI) has been one of the most debated issues in the field of engineering. Research toward the creation of AI includes a creation of self-aware machines that have superior intellectual abilities to that of human abilities. However, many researchers argue that the creation of AI will deeply change the society and it will help humankind to solve major societal problems, while others refute the arguments for the conceptual invention because of ethical problems that AI will bring such as an anticipated human annihilation by these agents. This paper focuses on the the ethical problems that the creation of AI will raise.

Keywords: artificial intelligence, robotics, ethics, society

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Introduction

Even though the term robot was coined two centuries ago and the idea of AI emerged decades ago, some of the problems that have been raised by these two terms are yet to be solved. Sometimes, solutions for any arbitrary problem can be solved by seeing the bigger picture rather than scrutinizing tiny details. Thus, this paper focuses on numerous definitions for these terms and various applications of them which create intricacies and challenges in many level, varying from individual to societal level. Formation of this paper is as it follows: ##, ##, ##

The Bigger Picture

What is a Robot?

One common definition of AI is cited by Bostrom (n.d.), "A super-intelligence is any intellect that is vastly outperforms the best human brains in practically every field, including scientific creativity, general wisdom and social skills." This definition clearly distinguishes specific domain intelligent agents and AI. Based on this definition a computer system, Deep Blue, which is a well-known computer system for its success in chess can be considered smart within a narrow domain rather than a genuine AI supported by limitations that Duffy (2006, p. 34) speculates.

By literary definition the term robot is derived from the Czech word "roboti" meaning serf-labor. However, this definition closely refering to slave-like labourer has altered to something brand new as technology advances. In his article entitled "The Sheer Difficulty of Defining What a Robot Is", Pearson (2015) discusses two distinctive definitions of robotics that are posed by the prominent experts in the field of robotics. These two definitions emphasize different aspect of robotics creating important distinctions among them. The first definition puts emphasis on the successful combination of a rigid body

responsible for interacting with its environment and a central reasoning unit responsible for reasoning tasks based perception and cognition. Without s software and hardware collaboration, as Pearson (2015) cited in his article, accomplishing its tasks for a robot cannot be possible. The second definition, however, takes autonomy into account. A robot, Pearson (2015) quoted in his article, must have an detailed idea of any action formed by a tedious plan, accurate reasoning and precise action to interact with its physical environment. In light of these definitions, robots have to interact with its environment, which exclude any means of social interactions. However, Lanier (2010) asserts that socially interaction robots are significantly popular among society. Albeit popular, social robots, for instance a teacher robot or a guidance robot employed in an art gallery, seem to be decontextualized. This discrepancy brings about a major problem in individual and societal level. For instance, individuals have started to get strong advices from AI applications rather than a close friend who know better about the individual seeking advices, the taste of of music or book for instance, than a software crunching numbers faster than a man. Even though this issue seems to have a minor flipside, once it is aggregated, it will create true alienation from society and confussion regarding personhood, Lanier (2010) claims.

What (should) does a Robot do?

In order to make clear its obfuscated definition, the tasks of AI should be addressed. The task of AI is to create methods to enable machines to obtain symbolic data sets and manipulate them in order to solve generic problems in the most energy efficient and fastest fashion. The theory suggests that it is possible to achieve by imitating the processes of logical reasoning and decision making. Consequently, cognitive and perceptual systems of the human body have been scrutinized by researchers in order to emulate these processes at the hardware and software level.

Along with the definitions of robotics, the applications of it extensively vary which makes it hard to define or understand the task and the responsibilities of robots. Lanier

(2010) gives different examples from a software tailored for "Jeopardy" to a teacher robot. Although Pearson (2015) excludes any means of social interaction in the definitions of robotics proposed in this article, Al-Rodhan (2015) exemplifies an emerging application of robotics, a molecular level robot which identifies cancerous cells and attach them by releasing antibodies, thereby eliminating cancerous cells. Even though, experts have not been able to solve dilemma within the field of robotics, this case of sophistication within robotics exemplifies another complex issue. The reason why these social interaction dilemma matter, whether in bodily level or molecular level, is that technology advances in faster pace that of the wisdom regarding robots and ourselves.

Conclusion

The notion of increasingly accelerating technology with the precious help of scientific research studies thrills individuals, and gives hope to patients. Yet, it is crucially important to decide whether or not robots are simply functional machines that are utilitarian in their responsibilities and nothing more. If so, it is irrelevant to discuss the ethical problems arisen by its creation because the problems will become a question of accuracy of the source code that runs robots and forms AI. In that case, the matter should be discussed would be how to prepare individuals, societies and governments its coming. As for the ethical problems, they will highly likely to be no more prone to erroneousness than any other human invention. If evolutionary and development psychology is taken into account, the first members of fully autonomous social robots will also evolve rapidly to their excellence. As the expansion and the accessibility to AI and robotics increase, the prediction of the aftermath has become decrepit due to the late response of individuals and their wisdom toward these technologies. Thus, robotics and AI should be scrutinized to understand and formulate its definitions and functions, otherwise yet another issue will jump into debate topics before formers could be solved.

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