

600.435 HW1: AI in the Public Imagination

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TOTAL POINTS

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QUESTION 1

1 Essay 100 / 100

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AI in the Public Imagination

I remember the professor Philipp Koehn gave us main topic area of Artificial Intelligence at first course. It let me have a deeper understanding about the area that Artificial Intelligence involves in. The Artificial Intelligence includes economics, arts, computer science, psychology, cognitive science, neuroscience, philosophy and so on, so it is the extensive and multi-disciplinary field and it also gives me a refreshing understanding about Artificial Intelligence. In this essay, i will mainly talk and analyze the current status of AI, ethical issue about AI, motivation of AI and philosophical and mental behaviors of AI, and possible risk of AI where I use some examples from related literature and films to demonstrate my own thinking about AI.

I googled the definition of Artificial Intelligence which is intelligence exhibited by machines and in Computer Science, the field of AI research defines itself as the study of "intelligent agents". For my understanding, the AI is that human let machine to be smarter as much as possible like human beings even more intelligent than human beings, which is possible that future machine may have consciousness, feelings, physical expression and even owns neural thinking mind. I think it is the trend of computer and human society, which will let AI robot to replace human beings in many field in order to emancipate human beings. In some future science fictional films like, the AI robot can replace human work and help human beings to handle lots of things even can protect your security like the Terminator 2 which the T-800 AI robot protects the leading character, John who will become the leader of human resistance. In fact, I am a big fan of series of films of Terminator because of high intelligent and physical structure which is really like a real man and it makes me so expressed. In the film, the T-800 model robot even knows everything it can be traced in background database. In this point, AI robot is smarter and more powerful than human beings.

There must be some ethical issues which are the designers and developers worry about. In Terminator 2, John's mom, Sarah almost knocked down the CUP chip of T-800 model robot, which reflects that human beings are potentially unbelievable to AI robot. It is possible that if AI owns enough power to get rid of human control and even fight against human beings, that be so terrible, which is against original idea of human design of AI. The ethical issue is attention on

ethical issue when we design or develop AI. In other words, we can use necessary rules to control the behavior of AI product in : order to reduce possibility of potential bad effect.

It is true that when human technical engineers develop AI products, there are some technical problems which involve us to consider what direction the AI products need to go. We may ask ourselves: do they need to be smarter enough and have optimal value judgement or do they need to be like a real man even they can make some flaws? Which way is better for AI to develop in the future? There are so many problem which remain to be unsolved. I remember some contents in the second class and it is about Trolley Problem. I am really confused about the final decision if the we let AI robot to balance which way the trolley should go in order to reduce the risk as much as possible. The final decision is the key about how we program our AI products once they face this kind of problem. So it need technical engineers to be careful to design program and think situation comprehensively in order to let AI products to withstand moral judgement in human society when they handle the problems.

The artificial intelligence is indeed the direction of future development. The problem is that whether you like working with a AI robot co-employee which don't make flaws in work or not. Maybe we can teach AI robot like scenario in Terminator 2 that John teaches T-800 to smile, joke and slang. But we must ask ourselves does a AI robot know the social real meaning of these actions? Does it know the background meaning when real people communicate with each other? As a computer science graduate student, I really doubt a AI robot can understand real people's world to some extent. Hence, it is a big difference between human beings and a high intelligent machine. Maybe a AI machine can own feelings, touch, emotion and so on. But they must be measured by cold data rather than nature perception. So as for me, it is hard for me to imagine an AI robot falling in love with a real human being in some science fictional literatures or films. I think human mind is unique and can't be transplanted mechanically. In Chappie and Transcendence, human mind can be uploaded into machine and machine can develop itself to be super-intelligent. I don't make sure that whether multiple mind copies are still be same as original mind. It is difficult for AI researchers to judge it now. Hence, it needs the development of related fields in order to be clearer to consider this problem of "If you copy yourself, is it still you?".

From the content of second course in AI, the professor Philipp Koehn talked a lot about science movie which are respectively old movies finished at least ten years from now or maybe longer. These movies let us consider the problems that AI may cause from multiple perspectives. In the movie named “A Space Odyssey” which tells a story about the AI robot named HAL 9000 doesn’t listen or execute human command. It is possible that if a AI robot that we designed is out of control, we ask ourselves how human beings should do to face this situation. Although the plot of this movie has not happened until know, it indeed need us to seriously think of this problem in order to keep human safety. Another field I want to analyze is about whether a robot is necessary to own emotion like humans. In Terminator 2, John taught T-800 model how to smile, meaning of sadness and the human relative relationship and in the end of film, the T-800 seems to understand the meaning of John’s cry. For this film, a robot owning emotion is a good thing because the emotion let robot no more than a cold killing machine. But if we consider this problem from contrary direction, the good or bad maybe reverse. For example, a robot owning emotion loves a real human or a human loves a AI robot like the movie “Her”, I think current human rule, laws and social value cannot contain such policy to reasonably handle this kind of problem very well. So that means the continuous development of artificial intelligence must be along with more mature understanding of relationship between human beings and the original purpose to design AI. That’s where we need to pay more consideration.

The philosophy of mind is also an important part of AI research field. According to the theory of Functionalism, human behavior can be explained by the physical environment and mental states. In other words, due to the combination of the physical environment and mental states makes hard to build mind/consciousness machine. In human life, the AI cannot avoid the scenario that people use the same words to represent different definition. For example, if a professor says that please give me a hammer that I need to accomplish this task in his lab. Does it really mean the professor needs a real hammer to fix something? For people, it is not hard to understand the deep behind meaning of this professor who just want maybe his research students give him some hints or ideas about some specific problem. But for a AI machine, it is difficult to distinguish the between surface meaning and specific meaning in specific scenario. Currently, according to the development of AI technology, I don’t think it can understand a word in specific scenario so we

need to find a way to solve this problem in order to push AI field to a higher development platform. At this stage, it is what the AI researchers need to make more efforts on.

In the public imagination of AI, scientists create machine to be more creative and intelligent than humans in order to help people or even replace people from specific positions to create value for human society. The most memorable thing is that when I was a kid, I saw a news about Stephen Hawking how to transfer his great thought through a special AI computer which can analyze or even predict relevant words and understand his way to communicate or consider. This adaptive AI product was designed by an Intel research team. It is a great and meaningful thing to help Stephen Hawking to transfer his consideration of the secrets of universe. We can suppose that if there is no such AI product to help some greatest people like Stephen Hawking, that must be a factor of limitation for human society to develop as much as like it is now. Truly, it must be positive reason for human to pay more efforts on AI research field to develop and further study AI.

Unfortunately, everything has two sides. Some people hold a respectively negative attitude about future of development of AI. A number of scientists and researchers have expressed worry that humanity is not enough to prepare for the risk of artificial intelligence. There many films like Terminator, Transcendence which use movie's expression method to make some predictions about disasters of future AI. As human beings, we don't want to design a sinister killing machine like terminator or uploading human minds into a computer but we don't know whether it doesn't end well. I searched some news about films about AI. It was reported that after Transcendence was released, Hawking and some computer scientists published an op-ed about the dangers of AI. For now, there are too many uncertain factors about whether creating AI robot is one of the best things in human history or not and we don't have enough deep research to help us understand the impacts of AI towards humanity. Maybe the answer will come soon or keep long-term uncertain.

As my own attitude towards the future of AI, I feel it is positive on the whole but we need to keep it into a certain range rather than unlimited development in order to lower the risk of machine controlling humans. Indeed, the development of artificial intelligence is the unstoppable

trend at current stage because some famous internet companies like Facebook, Baidu, Google have invested a lot of money on AI and many AI services can be applied to public people in order to help them to simplify life and improve standard of life. For example, nowadays, we can use some AI robots to take place of humans to do some high dangerous work like rescue work and some AI software can help us to plan daily schedule and handle daily trivial things like reserving restaurant. We could not deny the many advantages that AI has contributed to human society to help us live more convenient. Nowadays, every people must be surrounded by technology even we can see that humans are affected by technology all the time. Hence, I am not too much worry about the negative side of AI. Truly, it changes human life towards good direction. As for me, I think the warning from some science film like "Terminator" is human crisis consciousness which is just a remind or warning. As long as the AI development can be controlled in reasonable range, it must be more positive than negative to human life. We also need time to tell us the sure answer.

There are some main limitations of the development of artificial intelligence. Philosophy, ethics, physical and mental capabilities of AI, all of them have many unknown things that need to be clear first. Nowadays, scientists have not considered a reasonable way to solve these problems. I think as three very important parts of AI, the neuroscience and psychology and cognitive science are need to be researched deeper in order to provide enough technological support for the future development of AI.

In my opinion, the motivation of the artificial intelligence is the origin of freedom that human beings have been chasing through human history. With the development of technology, more and more tasks can be finished by machine. This improvement let people to have more spare time and energy to consider more challenging and meaningful things in order to improve the speed of human progress. I have seen many science fiction or films about how a people live in the future. Most of them involves the theme of smart life which is some part of artificial intelligence. We can imagine that maybe a business man can hire a AI robot to help him manage his business and as for him, he just need to enjoy life and check the money regularly. That must be a life lots of people dream of. So one of the motivation of artificial intelligence is that humans don't want to be bounded and make life convenient and easier as much as possible. The second point that I

think is due to physical and mental limitation of human body, human decides to design a machine which can help human break constraints which are unique to human beings. For example, a people cannot know everything in the world but AI maybe can implement it easily at some day. In the end, the motivation of the artificial intelligence is complex and it is made up of a variety of factor.

In fact, AI is not only on behalf of high intelligent humanoid robot, but also artificial intelligent machine which can be virtual in the internet and also can be a real entity. Nowadays, I can see current AI products have changed human life a lot. For an example, many people use iphone as their communication mobile tool and it is true that an app which is developed by APPLE named siri is installed in iphone. The siri is a virtual human-computer interaction app which can help people find what they want quickly through the internet. As for me, I often use siri to set the alarm and search map when I arrive at new place. The siri is like virtual high intelligent human assistant behind us. So the siri is a current representative AI product. To some extent, the echo which is designed by Amazon, is similar to siri.

In a conclusion, AI field involves too many intersections with humanity. As for me, I think we need to consider two main questions: 1. The long-term direction of development of AI 2. If we once face to risk or disaster of AI, which is predicted by some literatures or films, How human decide to do to face this possible huge challenge, which is necessary and significant for all of us to consider comprehensively before it truly happen in some day.

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